No. 90-326

Supreme Court, U.S.
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IN THE

Supreme Court of the United States

October Term, 1989

DATAPOINT CORPORATION,

Petitioner,

vs.

NORTHERN TELECOM, INC.,

Respondent.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

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QUESTIONS PRESENTED

This petition presents the following questions:

1. Does not the decision of the Federal Circuit conflict directly with the pronouncements of this Court in *Amadeo v. Zant*, 486 U.S. 214 (1988), as to the proper role of a court of appeals in applying Rule 52(a) to a trial court's critical assessment of witness credibility, when the lower court here heard "conflicting expert testimony" and expressly relied upon the "persuasive and credible" testimony of two such experts to hold the patent-in-suit invalid under 35 U.S.C. §112, but the appellate court relied upon alternative witnesses' testimony which the trial court had declined to credit to reverse that holding?

2. Does not the decision of the Federal Circuit, in reversing a holding that the patent-in-suit was "non-enabling" and thus invalid under 35 U.S.C. §112, violate this Court's admonition in *Dennison Mfg. Co. v. Panduit Corp.*, 475 U.S. 809 (1986), that even if validity is a question of law, subsidiary fact determinations of a district court are subject to Rule 52(a) and this Court's reminder in *Amadeo v. Zant*, 486 U.S. 214 (1988) about the interrelationship of witness credibility and the "clearly erroneous" standard of Rule 52(a), when the appellate court rejected the trial court's choice between conflicting oral testimony and instead relied upon testimony of witnesses not credited by the trial court?

3. Does not the Federal Circuit, in its *de novo* review of the question of enablement under 35 U.S.C. §112, violate the standards established in *Dennison Mfg. Co. v. Panduit Corp.*, 475 U.S. 809 (1986), by first refusing to accept the trial court's findings of fact regarding which witnesses were credible and then reversing because it believed "the great weight of testimony" — based on mere nose counting without allowance for credibility — was to the contrary.

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RULE 29.1 STATEMENT

Petitioner Datapoint Corporation has no parent companies or subsidiaries apart from wholly-owned subsidiaries or affiliates, except for Federal Integrated Systems Corp., a Nevada corporation.

NO. _____

In The

Supreme Court of the United States

DATAPOINT CORPORATION,

Petitioner,

vs.

NORTHERN TELECOM, INC.,

Respondent.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

Petitioner respectfully prays that a writ of certiorari issue to review the judgment of the United States Court of Appeals for the Federal Circuit in its Cause Nos. 89-1034,-1035 insofar as the judgment reversed the trial court's holding that claims 1-23 and 29-46 of United States Patent No. 3,760,375 were invalid because of failure to comply with the statutory "enablement" requirement of 35 U.S.C. §112. The judgment was entered on June 29, 1990, as a result of which seven claims were found to be valid and infringed. Rehearing was denied on August 2, 1990.

OPINIONS BELOW

The opinion of the Court of Appeals has been reported at ____ F.2d ___, 15 U.S.P.Q.2d 1321 and is reprinted in the appendix to this petition commencing at page 1a. The Order denying rehearing is reprinted in the appendix to this petition commencing at page 28a. The District Court opinion has been reported at 9 U.S.P.Q.2d 1577 and is reprinted in the appendix to this petition commencing at page 30a. (The pertinent portions for purposes hereof are to be found at pages 15a - 19a, 67a - 69a of the appendix, in this volume.)

JURISDICTION

The judgment which Petitioner seeks to have reviewed by this Court was entered on June 29, 1990. A petition for rehearing was denied on August 2, 1990. Jurisdiction was conferred on the District Court by 28 U.S.C. §1338. Jurisdiction was conferred on the Federal Circuit by 28 U.S.C. §1295. This Court has jurisdiction to review the judgment of the Court of Appeals under 28 U.S.C. §1254(1).

STATUTES AND RULES INVOLVED

35 U.S.C. §112

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.
>
> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
>
> A claim may be written in independent or, if the nature of the case admits, in dependent or multiple dependent form.
>
> Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by

reference all the limitations of the claim to which it refers.

A claim in multiple dependent form shall contain a reference, in the alternative only, to more than one claim previously set forth and then specify a further limitation of the subject matter claimed. A multiple dependent claim shall not serve as a basis for any other multiple dependent claim. A multiple dependent claim shall be construed to incorporate by reference all the limitations of the particular claim in relation to which it is being considered.

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

Federal Rules of Civil Procedure

Rule 52(a)

(a) **Effect.** In all actions tried upon the facts without a jury or with an advisory jury, the court shall find the facts specially and state separately its conclusions of law thereon, and judgment shall be entered pursuant to Rule 58; and in granting or refusing interlocutory injunctions the court shall similarly set forth the findings of fact and conclusions of law which constitute the grounds of its action. Requests for findings are not necessary for purposes of review. Findings of fact, whether based on oral or documentary evidence, shall not be set aside unless clearly erroneous, and due regard shall be given to the opportunity of the trial court to judge of the credibility of the witnesses. The findings of a master, to the extent that the court adopts them, shall be considered as the findings of the court. It will be sufficient if the findings of fact and conclusions of law are stated orally and recorded in open court following the close of the evidence or appear in an opinion or memorandum of decision filed by the court. Findings of fact and conclusions of law are unnecessary on decisions of motions under Rule 12 or 56 or any other motion except as provided in Rule 41(b).

STATEMENT OF THE CASE

This suit for infringement of the forty-six claims of United States Patent No. 3,760,375 (the "'375 Patent") was filed in 1982 against petitioner, Datapoint Corporation ("Datapoint"), in the United States District Court for the Northern District of Texas, Dallas Division. Datapoint denied infringement and asserted that the '375 Patent was invalid and unenforceable. Trial to the District Court on the issues of liability[1] consumed seventy days, during which time the judge not only heard what the witnesses said, but watched their manner of testifying and the reasons given for their testimony. After trial, the District Court issued a 218-page opinion. Based upon that opinion, the court entered judgment holding all claims invalid and unenforceable.

The trial judge made underlying factual findings to explain why the '375 Patent was invalid for, *inter alia*, failure to comply with the "enablement" requirement of 35 U.S.C. §112.[2] These factual underpinnings were based on critical credibility determinations by the trial judge, who was presented with conflicting expert testimony. 9 U.S.P.Q.2d at 1597, 69a.

Credible Witnesses Persuasively Explained Why Undue Experimentation Was Required

By way of background, the '375 Patent is for a "source data entry terminal" — a limited purpose computer specifically programmed in a certain way for data entry. As depicted in Figure 2 of the '375 Patent, the terminal included a keyboard 12, a CRT display 14, at least one cassette recorder 16, a "fixed-program microprocessor" 32[3] and a data buffer 34.

[1] The District Court bifurcated liability and damages on January 25, 1984.

[2] "The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains . . . to make and use the same . . . ."

[3] The '375 Patent issued on September 18, 1973 from a 1971 continuation application of a parent application filed on June 13, 1969. *See generally* 37 C.F.R. § 1.60. In June, 1969, the term "microprocessor" merely referred to a small processor. The seminal Intel microprocessor chip was not announced until the early 1970's, some years after the parent application was filed.

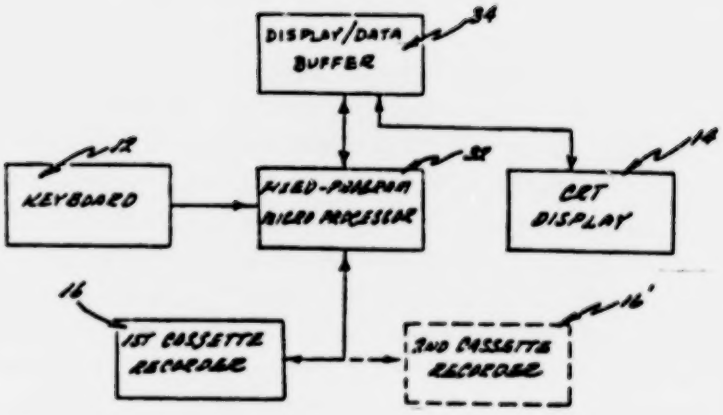

FIG. 2.

According to the '375 Patent, the microprocessor included a wired read-only memory ("ROM") 38 of very limited size. The patent also explained that the ROM contained "an appropriate" instruction set[4] for time-sharing while the microprocessor had a "fixed program."[5] Critically, however, it was uncontroverted that the '375 Patent did not set forth any technical details about either the instruction set or the fixed program.

During the seventy-day trial, the District Court learned about the complicated interrelationship between the instruction set and the fixed program. According to the '375 Patent, the fixed program in the microprocessor was required to perform the functions of programmed or free-form data entry, verification, correction, recording, search, edit and display. The trial court understood that in 1969 it was a most complicated endeavor to create an instruction set *from scratch* and then use it to implement those functions.[6] The trial court reached this

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[4] An instruction set is the machine level functions that are to be part of the basic repertoire of the computer.

[5] Although the Federal Circuit believed the claimed invention "is not in the details of the program writing," 15 U.S.P.Q.2d at 1329, 16a, "fixed program" was explicitly recited as an element of many of the claims and undoubtedly is required in order to use the patented invention. Moreover, infringement was found only when Datapoint hardware was used with specific Datapoint computer programs.

[6] This is unlike modern-day computers which come with an operating system.

understanding through the testimony of Dr. Kay Magleby and Professor Wesley Clark. Those two witnesses also presented testimony about the factual underpinnings of program non-enablement, which the lower court found to be "persuasive and credible" testimony.

For example, Professor Clark noted that the '375 Patent did not present an instruction set, nor did it cure this deficiency by disclosing other information such as flow charts, block diagrams, source code listings or anything else related to a program. Professor Clark opined, however, that such disclosure was required in 1969 for one reasonably skilled in the art "to avoid spending a great deal of experimental time."[7] Professor Clark also noted that the '375 Patent was deficient in its failure to provide any details regarding a "format program." Although the term "format program" is mentioned many times in the '375 Patent, he pointed out that it is never defined. Dr. Magleby concurred and explained that the term "format program" did not actually relate to a program but instead constituted an unspecified method of defining "what the format is." He could not tell from the '375 Patent what a typical "program format"[8] might be, "what kinds of instructions or symbols are going to be used to specify how it's to operate, what are the range or limits that it can — under which it can work?"

The District Court Properly Credited the Clark and Magleby Testimony

Simply stated, Professor Clark and Dr. Magleby provided testimony — deemed "persuasive and credible" by the District Court — that the '375 Patent lacked sufficient information to enable a skilled programmer to create, without undue experimentation, programs for the terminal to perform the noted functions and be used by a non-technical operator. There was some testimony to the contrary, but the District Court (unlike the Federal Circuit) declined to credit it.

[7] He gave specific reasons for this testimony: since the '375 Patent did not define the instruction set, a programmer would need to go through a "difficult" set of iterative tasks, starting from scratch. The programmer would first need to design an instruction set appropriate for a device which had a memory of the very limited size described in the '375 Patent. The programmer would then write a program based on the assumed instruction set and see if the program caused the machine to function in the vague way defined in the '375 Patent.

[8] A "program format" is an explicit element of three of the claims found infringed.

The District Court explained that it had considered the "conflicting expert testimony" regarding whether one skilled in the art would be able (without undue experimentation) to write the programs needed to practice the invention of the '375 Patent. 9 U.S.P.Q.2d at 1597, 69a. The trial court chose "from among the testimony presented" and found "to be persuasive and credible" the testimony of Professor Clark and Dr. Magleby. *Id.* Judge Fitzwater explained that their testimony established that the "specification's lack of any information concerning the invention's programs would require a person reasonably skilled in the art of computer programming to experiment unduly in attempting to write programs for the '375 device." *Id.*[9]

The Fact Finding Efforts By the Court of Appeals Are Violative of Fed. R. Civ. P. 52 As Well As Wrong

The Federal Circuit, in its zeal to reverse the finding of invalidity, failed to give due regard to the District Court's decision to credit the testimony of Dr. Magleby and Professor Clark over the testimony of other witnesses. Instead, with nothing but a sterile transcript, the appellate court unjustifiably relied upon the testimony of alternative witnesses to rationalize reversal of the invalidity holding. The Federal Circuit thus sought to second-guess the trial court's determination that Professor Clark and Dr. Magleby presented credible testimony. In its efforts to support reversal, the Federal Circuit necessarily ignored Professor Clark's explanation about why creation of the requisite computer program was not routine and would require a

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[9] The trial court gave several examples to show why it credited the testimony of Dr. Magleby and Professor Clark. For instance, Dr. Magleby explained that "he could not discern *where* the program format would be loaded, what would be a typical program format, what characters would be used, or what would be the range or limitations of the format program." 9 U.S.P.Q.2d at 1597, 69a (emphasis added). The trier of fact also credited Professor Clark's testimony that the '375 Patent did "not set out either the '375 machine's job or the needed instruction set." *Id.* Likewise, Judge Fitzwater cited Dr. Magleby's testimony that the specification's "general lack of information would cause one skilled in the computer programming art and attempting to build a '375 machine to experiment unduly." *Id.*

"great deal of experimental time."[10] Furthermore, it sought to impugn Dr. Magleby's credibility.[11] 15 U.S.P.Q.2d at 1329-30, 17a - 18a.

Concomitantly, the Federal Circuit pointed to the testimony of three witnesses (Gordon Bell, Earle Pughe and Fernando Corbato), who the trial court did not here deem credible, to reverse the holding of non-enablement. 15 U.S.P.Q.2d at 1329, 16a - 17a. In fact, Mr. Bell testified at trial that an ordinary programmer operating under the "intense memory constraint" of the '375 Patent would have trouble with the tricky programs, such as editing, that were essential to the '375 Patent. The Federal Circuit ignored this testimony, however, and instead used his prior inconsistent deposition testimony. At trial, Mr. Bell agreed that he had changed his testimony since his deposition. He explained that he had changed his position because he had not considered the memory constraints of the patent during his deposition. The trial court had the opportunity to see and hear Mr. Bell and reached a conclusion consistent with his trial testimony, while the appellate court openly engaged in unwarranted fact finding in its reliance on the deposition testimony. Similarly, the reviewing court cited snippets of testimony from Mr. Pughe and Professor Corbato. In so doing, the Federal Circuit brazenly ignored the District Court's credibility determinations — a clearly impermissible usurpation of the trial court's role — to support the appellate court's predisposition to uphold the validity of the '375 Patent. [12]

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[10] Professor Clark testified that regardless of how the computer was designed, a skilled programmer would need to know what the instruction set was to program it without undue experimentation.

[11] The Federal Circuit cited his testimony that he could not determine where the format program was "loaded" and pointed to his agreement that the '375 Patent describes where the program format is stored and how it is entered into the delay line. It thus confused loading and storing, a mistake not made below and which formed no basis to reject the lower court's finding of credibility.

[12] The Federal Circuit also misunderstood what Mr. Pughe actually said. Mr. Pughe stated that he could at some *undefined* time have built a fixed-program ROM with an *unspecified* source data entry program. This is hardly a basis for enablement, as the District Court obviously recognized.

Having wrongfully substituted its own judgment on witness credibility, the appellate court then counted noses to conclude that "[t]he great weight of the expert testimony on both sides was that a programmer of reasonable skill could write a satisfactory program with ordinary effort." 15 U.S.P.Q.2d at 1330, 18a. Datapoint sought rehearing, also suggesting rehearing in banc. The petition for rehearing was denied on August 2, 1990.

REASONS FOR GRANTING THE PETITION

The Trial Court's Critical Fact Findings Regarding Witness Credibility Were Based On Competent Evidence, And The Federal Circuit Should Not Have Ignored Those Findings

The Court should issue the writ of certiorari in this case because the Federal Circuit's reversal of the trial court is grounded upon a total disregard of the requirements of Rule 52(a) and is catastrophically unjust. The appellate court substituted its view of factual issues based upon dry transcript and ignored the crucial findings of credibility. Moreover, despite the Federal Circuit's well-recognized predilection for appellate fact finding,[13] this Court has not previously considered a Federal Circuit opinion to assess that appellate court's role in reviewing findings permeated with determinations of credibility.

In *Dennison Mfg. Co. v. Panduit Corp.*, 475 U.S. 809 (1986), the Court summarily granted a petition for certiorari and reversed the Federal Circuit for ignoring Rule 52(a). The *Dennison* Court did not consider whether the Federal Circuit's opinion comported with Rule

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[13] In 1987 alone, the BNA's *Patent, Trademark & Copyright Journal* ran five stories about certiorari petitions seeking redress from Federal Circuit fact-finding. *See* Pat. Trademark & Copyright J. (BNA), Vol. 33, pg. 125, reporting *Stora Kopparbergs Bergslags A. B. v. Crucible, Inc.*, 793 F.2d 1565, *cert. denied*, 107 S.Ct. 882 (1987); Pat. Trademark & Copyright J. (BNA), Vol. 32, pg. 478, reporting *Monoclonal Antibodies, Inc. v. Hybirtech, Inc.*, 802 F.2d 1367, *cert. denied* 107 S.Ct. 1606 (1987); Pat. Trademark & Copyright J. (BNA), Vol. 31, pg. 545, reporting *Dennison Mfg. Co. v. Panduit Corp.*, 810 F.2d 1561, *cert. denied*, 107 S.Ct. 2187 (1987); Pat. Trademark & Copyright J. (BNA), Vol. 34, pg. 593, reporting *Barnes-Hind/Hydrocurve, Inc. v. Bausch & Lomb, Inc.* 796 F.2d 443, *cert. denied*, 108 S.Ct. 85 (1987); Pat. Trademark & Copyright J. (BNA), Vol. 34, pg. 593, reporting *Verdegaal Bros. Inc. v. Union Oil Co. of California*, 814 F.2d 628, *cert. denied*, 108 S.Ct. 95 (1987).

52(a) because of the absence of any meaningful appellate analysis. 475 U.S. at 811. Nevertheless, in the course of its summary treatment, the Court emphasized that subsidiary determinations of the district court in appellate review of a legal conclusion of obviousness under 35 U.S.C. §103 are subject to Rule 52(a). 475 U.S. at 810. "Enablement" under 35 U.S.C. §112 unquestionably presents the same interrelationship between fact and law as "obviousness" under 35 U.S.C. §103,[14] which was at issue in *Dennison*. *See, e.g., Spectra-Physics Inc. v. Coherent, Inc.*, 827 F.2d 1524, 1533 (Fed. Cir.), *cert. denied* 484 U.S. 953 (1987). Thus, although conclusions under Section 112 may be ones of law, the Federal Circuit has no more right to ignore subsidiary factual findings than this Court was willing to permit in *Dennison*.

In *W. L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, *cert. denied*, 469 U.S. 851 (1984), the Federal Circuit noted that a patent "is invalid only when those skilled in the art are required to engage in *undue* experimentation to practice the invention. There was no evidence and the Court made no finding that undue experimentation was required." 721 F.2d at 1557 (Emphasis in original; citation omitted). By contrast, the District Court here identified the evidence that it found to be credible and specifically found that undue experimentation would be required. 9 U.S.P.Q.2d at 1597, 69a. The appellate court ignored the evidence the trial court deemed credible and instead selected alternative testimony, without rational basis, to reverse the invalidity holding. This appellate fact finding is prejudicial to Datapoint. It also is unfair to the District Court which so painstakingly laid out in detail the credibility factors which were crucial to its ultimate holdings.

In improperly making findings of fact, the Federal Circuit not only disregarded this Court's instruction in *Dennison*, but also ignored the recent decision of this Court in *Amadeo v. Zant*, 486 U.S. 214 , 108 S.Ct. 1771 (1988). In the *Amadeo* case, Justice Marshall, writing for a unanimous Supreme Court, reiterated what the Court frequently has

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[14] The Federal Circuit has held that enablement is a question of law. *Lindemann Maschinenfabrik GMBH v. Am. Hoist & Derrick Co.*, 730 F.2d 1452 (Fed. Cir. 1984). Several pre-1982 decisions had held to the contrary. *See, e.g., Locklin v. Switzer Bros., Inc.*, 299 F.2d 160, 166 (9th Cir. 1961), *cert. denied*, 369 U.S. 861 (1962).

emphasized: "[w]here there are two permissible views of the evidence, the fact finder's choice between them *cannot be clearly erroneous*." 486 U.S. at ___, 108 S. Ct. at 1778. (Citations omitted; emphasis added.) The Court also stressed the special deference to be accorded on appeal to determinations by the fact finder regarding the credibility of witnesses. 486 U.S. at ___, 108 S. Ct. at 1779. With this background, it reversed the appellate court for engaging in impermissible fact finding.

Despite such clear instruction, in the case at bar the Federal Circuit redefined credibility (without any basis) to reverse the holding of nonenablement. The reversal by the Federal Circuit constitutes impermissible appellate fact finding, which contravenes the precepts of this Court and the Federal Rules of Civil Procedure.

CONCLUSION

The decision of the Federal Circuit reversing the holding of invalidity because of nonenablement would impose a gross injustice upon Datapoint, and Datapoint accordingly prays that the writ of certiorari be issued.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that three copies of the foregoing Petition for Writ of Certiorari were served upon counsel of record for Northern Telecom, Inc. this ____ day of August, 1990.

_____

APPENDIX

United States Court of Appeals for the Federal Circuit

89-1034, -1035

NORTHERN TELECOM, INC.,

Plaintiff-Appellant,

v.

DATAPOINT CORPORATION,

Defendant/Cross-Appellant.

DECIDED: June 29, 1990

Before MARKEY, * NEWMAN and ARCHER, *Circuit Judges*.
PER CURIAM.

Northern Telecom, Inc., successor-in-interest to Sycor, Inc. (together herein "Sycor"), appeals the decision of the United States District Court for the Northern District of Texas. *Northern Telecom, Inc. v. Datapoint Corp.*, No. CA3-82-1039-D (N.D. Tex. Aug. 31, 1988). Datapoint Corporation has filed a cross-appeal. At issue are the validity and enforceability of United States Patent No. 3,760,375 ("the '375 patent"), and infringement by Datapoint.

We affirm the district court's holding that certain claims had not been proved invalid under 35 U.S.C. §§ 102 and 103, that certain claims are infringed, and that certain claims are invalid for failure to

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* Circuit Judge Markey vacated the position of Chief Judge on June 27, 1990.

comply with the best mode requirement of 35 U.S.C. § 112. We reverse the district court's holdings of invalidity for failure to comply with the enablement requirement of 35 U.S.C. § 112. We reverse the equitable determination of unenforceability based on inequitable conduct.

The Invention

The '375 patent, entitled "Source Data Entry Terminal", inventors Samuel N. Irwin and Michael R. Levine, relates to a mode of "batch-processing" of data. In batch processing, data are entered by the operator and stored, off-line,[1] the operator not interacting with the computer but simply with the batch data entry device.

Batch data preparation and entry were not new. Systems in common use at the time this invention was made included the IBM punch card, the paper tape punch, and the key-to-magnetic tape recorder. The invention of the '375 patent, a programmable processor-based batch data entry terminal, provided an improved way of entering, verifying, and storing data. Entry and verification of data at the source by persons who understand the data removes a source of error in data processing. The inventors built a major business on the invention of the '375 patent.

In accordance with the '375 invention, the data are keyed into a form that is displayed on the screen; the operator is guided by names and instructions on the screen; and certain entries are subject to automatic as well as visual checks and edits. A storage area, or buffer, holds the data as it is entered and, when the buffer holds a complete and correct record, the data are transferred to a magnetic tape cassette.

Sycor filed suit charging Datapoint with infringement of the '375 patent. Datapoint raised numerous defenses and counterclaims. The cause was vigorously litigated, the trial taking seventy days over a six-month period. The district court issued extensive findings of fact and conclusions of law, in a 219 page opinion. Each side appeals certain of the issues that were decided adversely to it.

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[1] "Off-line" means not actively connected to the computer, in contrast to "on-line", wherein the terminal is connected by a comunication link so that signals are transmitted directly between the terminal and the computer.

I

Obviousness - 35 U.S.C. § 103

Datapoint appeals the district court's determination that Datapoint did not prove by clear and convincing evidence facts requiring a holding that claims 35-37, 40-42, and 44 are invalid under § 103. Datapoint also raises the issue of invalidity under § 103 of claims 19, 20, and 25-28.

Datapoint relies as prior art on the Lincoln Laboratory Instrument Computer (LINC), developed in 1962 by expert witness Professor Clark, running the Patient Interview program, written by a Dr. Slack. The LINC is described as a stored program computer designed for laboratory use, consisting of a keyboard for data entry and commands to the computer, an electronics cabinet, an oscilloscope information display, and reel-to-reel digital magnetic tape units for storing data and programs.

Claims 40-42 and 44

Claim 40 is as follows:

> 40. A method of implementing a source data entry terminal device, comprising the steps:
>
> connecting selected input/output peripheral components including at least a keyboard data entry means and a visual data display means to a buffer memory and to a central processor organization, and using said buffer memory for temporary storage of data entered by said keyboard means;
>
> incorporating control logic for all such peripheral components in the central processor and controlling each such component by the central processor, such that said peripheral components need have substantially no local control logic of their own;
>
> and dedicating the terminal to a given operational configuration by incorporating a fixed program in said central processor.

Claims 41, 42, and 44 are dependent upon claim 40, and contain additional limitations.

The district court found that the final step of claim 40, requiring a fixed program, differed from the LINC because the LINC did not employ a fixed program. Datapoint contends on this appeal, as it did at trial, that this difference is a "routine design choice".

Sycor does not dispute that fixed programs are not new: inventor Irwin, in his testimony, gave the example of a calculator. Sycor describes the invention of the '375 patent as a new combination of known steps and elements, that provides a new and commercially successful solution to the problems of batch data entry. Sycor states that this combination was not taught or suggested by the prior art, including the LINC and the LINC as modified by the Patient Interview program.

It is insufficient that the prior art disclosed the components of the patented device, either separately or used in other combinations; there must be some teaching, suggestion, or incentive to make the combination made by the inventor. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985) (insufficient to select from the prior art the separate components of the inventor's combination, using the blueprint supplied by the inventor); *Rosemount, Inc. v. Beckman Instruments, Inc.*, 727 F.2d 1540, 1546, 221 USPQ 1, 7 (Fed. Cir. 1984) ("As this court has held, 'a combination may be patentable whether it be composed of elements all new, partly new or all old'") (citations omitted); *W. L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1551, 220 USPQ 303, 312 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984) (individual references can not be "employed as a mosaic to recreate a facsimile of the claimed invention.") The district court found that the technology for the invention claimed in the '375 patent existed at the time the invention was made, but correctly declined to engage in hindsight reconstruction of the claimed invention.

Datapoint argues that the differences between the LINC and the '375 invention are "trivial". The district court observed that the prior art failed to teach the combination and its use as set forth in the '375 patent, and stated that the invention's "commercial success, although not determinative of the issue, is some indication that the '375 patent was not [sic: invention would not have been] obvious", the court referring to *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966).

The prior art does not suggest the Irwin/Levine solution of the '375 invention to the batch data entry problem. As discussed in *In re Rothermel*, 276 F.2d 393, 397, 125 USPQ 328, 332 (CCPA 1960), the nature of the problem "which persisted in the art", and the inventor's

solution, are factors to be considered in determining whether the invention would have been obvious to a person of ordinary skill in that art. *See also, e.g., Fromson v. Advance Offset Plate. Inc.*, 755 F.2d 1549, 1556, 225 USPQ 26, 31 (Fed. Cir. 1985) (the prior art must suggest to one of ordinary skill in the art the desirability of the claimed combination). Whether the changes from the prior art are "minor", as Datapoint argues, the changes must be evaluated in terms of the whole invention, including whether the prior art provides any teaching or suggestion to one of ordinary skill in the art to make the changes that would produce the patentee's method and device. *Lindemann Maschinen-fabrik GmbH v. American Hoist and Derrick Co.*, 730 F.2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984).

We affirm the district court's holding that claims 40-42 and 44 had not been proved invalid on the grounds raised.

Claims 35-37

Claims 35-37 are dependent on claims 29 and 30, and include their limitations, as follows:

29. A method of source data capture, comprising the steps:

generating coded signals representative of alphanumeric source data desired to be captured;

visually displaying the data of which said signals are representative by use of such signals;

using a buffer memory to temporarily store the data being displayed;

and recording the data on magnetic tape after the data has been visually displayed.

30. The method of claim 29, including the step of using a program format to generate said data-representative signals in a predetermined relative sequence, and visually displaying said data in such sequence.

35. The method of claim 30, wherein said format is used by recording it on magnetic tape and reproducing the record format prior to actual use.

36. The method of claim 35, wherein said format is recorded on magnetic tape enclosed within cassette tape cartridges, of the basic type conventionally used for audio recording.

37. The method of claim 35, wherein the format recorded on said tape is loaded into a buffer memory by replaying the tape, and the format is held in such buffer during data entry.

Datapoint asserts that claims 35-37 do not differ from the LINC with the Patient Interview program, except in trivial detail. The district court analyzed these differences. As to claim 35, the court found: "The evidence is insufficient in addressing whether the program format of the [Patient Interview] program was held in a buffer memory. The court would have to draw unwarranted inferences from the evidence to conclude otherwise."

While invalidity is a question of law, the party asserting invalidity must by clear and convincing evidence establish facts supporting a conclusion of invalidity, and asserted inferences of fact must similarly be supported to meet this standard. Datapoint has not shown that the district court clearly erred in refusing to draw such inferences.

As to claim 36, Datapoint argues that Sycor's choice of cassette tapes to record data as opposed to the reel-to-reel system used in the LINC was "an obvious design choice." Sycor states that the use of cassette tapes in the '375 invention was a significant aspect of the '375 invention as a whole, and there was extensive evidence supporting this position. Datapoint does not show that the prior art suggests the Sycor combination. *Rosemount*, 727 F.2d at 1546, 221 USPQ at 7.

Datapoint has not by clear and convincing evidence established facts requiring the conclusion that the subject matter of claims 35-37 would have been obvious in terms of § 103. The holding of the district court in respect of claims 35-37 is affirmed.

Claims 19, 20, 25-28

The parties dispute whether Datapoint adequately raised the issue of the validity of claims 19, 20, and 25-28, based on the LINC as prior art. In view of our holding that these claims are invalid on other grounds, see Part V, *infra*, we do not consider this issue.

II

Anticipation - 35 U.S.C. § 102(b)

Datapoint challenges the district court's finding that claims 40-42

and 44 were not anticipated by certain "AESOP-B" documents because these documents were not "printed publications" in terms of 35 U.S.C. § 102(b)[2]. Whether a document is a "printed publication" is "a legal determination based on underlying fact issues". *In re Hall*, 781 F.2d 897, 899, 228 USPQ 453, 455 (Fed. Cir. 1986).

The AESOP-B was a complex military system for on-line distributed computer processing of logistical data such as the positions of aircraft. The documents in question are four reports on aspects of this system, identified as exhibits DX-2 through DX-5. The reports DX-2 through DX-5 were not under security classification, and were distributed to approximately fifty persons or organizations involved in the AESOP-B project. Document DX-5 contained the legend "Reproduction or further dissemination is not authorized . . . not for public release." The district court found that documents DX-2 through DX-4 "may have" contained such notices, the court finding that they "were of the class of documents that would have been distributed with such a notice." The documents were housed in a library at the Mitre Corporation, the company having principal responsibility for developing AESOP-B. Access to the library was restricted to persons authorized by Mitre.

A document, to serve as a "printed publication", must be generally available. *Garrett Corp. v. United States*, 422 F.2d 874, 878, 164 USPQ 521, 524 (Ct. Cl. 1970) ("While distribution to government agencies and personnel alone may not constitute publication . . . distribution to commercial companies without restriction on use clearly does.") *See Massachusetts Institute of Technology v. AB Fortia*, 774 F.2d 1104, 1109, 227 USPQ 428, 432 (Fed. Cir. 1985) (paper orally presented at a scientific meeting open to all persons interested in the subject matter, with written copies distributed without restriction to all who requested it, is a printed publication); *In re Wyer*, 655 F.2d 221, 226-27, 210 USPQ 790, 795 (CCPA 1981) (foreign patent applications that are made known to and are available to the public without restriction are publications).

The district court, referring to "the uncertainties of public access to the AESOP-B documents", found that Datapoint had failed to prove

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[2] 35 U.S.C. § 102: A person shall be entitled to a patent unless

(b) the invention was patented or described in a printed publication . . . more than one year prior to the date of the application for patent in the United States.

by clear and convincing evidence facts requiring a conclusion that these documents were "sufficient as prior publications, descriptive of the AESOP-B". The district court was unable to find that anyone could have had access to the documents by the exercise of reasonable diligence. *See Massachusetts Inst., supra.* We are unpersuaded that the evidence shows otherwise. Accordingly, we affirm that these documents were not printed publications.

Because the documents were not as a matter of law printed publications, we do not reach the issue of whether the AESOP-B system disclosed all the limitations of claim 29, on which claims 35-37 depend.

The district court's holding that claims 40-42 and 44 were not shown to be invalid under § 102(b) is affirmed.

III

Inequitable Conduct - The Rule 312 Amendment

The district court held all the claims of the '375 patent unenforceable based on inequitable conduct before the Patent and Trademark Office ("PTO"). On appellate review we apply the abuse of discretion standard. *Kingsdown Medical Consultants, Ltd. v. Hollister, Inc.*, 863 F.2d 867, 876, 9 USPQ2d 1384, 1392 (Fed. Cir. 1988) (in banc clarification of precedent). Abuse of discretion may obtain when the ruling reflects an erroneous application or interpretation of law, or shows a clear error of judgment, or is based on clearly erroneous factual findings. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1245-46, 9 USPQ2d 1913, 1928 (Fed. Cir. 1989); *Seattle Box Co. v. Industrial Crating & Packing, Inc.*, 756 F.2d 1574, 1581, 225 USPQ 357, 363 (Fed. Cir. 1985).

A

The basis for the district court's ruling of inequitable conduct was the filing of an "Amendment Under Rule 312" during prosecution of the patent application that led to the '375 patent.

During prosecution the examiner had objected to the application on various grounds, but eventually allowed the claims substantially as filed. After the PTO issued the notice of allowance, but before payment of the issue fee, Sycor requested amendment of the descriptive text of the patent application as authorized by PTO Rule 312, 37

C.F.R. § 1.312 (1969), which provided as follows:

> **§ 1.312.** Amendments after the notice of allowance of an application will not be permitted as a matter of right. However, such amendments may be made if filed not later than the date the issue fee is paid, on the recommendation of the primary examiner, approved by the Commissioner, without withdrawing the case from issue.

Sycor filed a four-page amendment under Rule 312, containing twenty-five specific changes to the specification. In explanation Sycor's patent attorney wrote:

> The present amendment under Rule 312 is primarily for the purpose of correcting certain typographical errors and other such discrepancies noted in the specification upon a final review of the same, immediately prior to payment of the issue fee.
>
> The errors and discrepancies sought to be corrected by this amendment were not noticed previously, and thus could not have been corrected before the present time; because the corrections merely add to the clarity and readability of the specifications [sic], entry of the amendment is believed to be in order and is solicited.

The district court held that five of the requested changes altered the scope of the original disclosure and the scope of the previously allowed claims. These five changes, as listed by the district court with the changes to the text underlined, were as follows:

(1) a wired *or like* read-only memory;

(2) read-only memory containing a hardwired *or other wise fixed* program;

(3) a hardwired *or fixed* program;

(4) a wired *or like* ROM *of the form just mentioned* is unalterable;

(5) the wired-in (*or otherwise fixed*) program in the ROM.

The examiner had written "Entry Recommended" in the margin of the Rule 312 amendment, alongside the first two changes listed above. On the official PTO form the box was checked "entered as directed

to matters of form not affecting the scope of the invention."

The district court found that the attorney intentionally misrepresented the purpose and nature of these amendments, and that this misrepresentation was material to patentability.

B

Sycor argues that the amendments simply conformed the descriptive text of the specification to the claims, as required by the rules of PTO practice, and thus could not, as a matter of law, broaden the disclosure and the scope of the claims. Sycor states that such concordance is routine, and indeed can be compelled by the examiner. Sycor argues that neither intent to deceive nor materiality has been shown, and that the examiner correctly entered the amendments.

The original claims as filed are part of the patent specification. 35 U.S.C. § 112, ¶ 2; *In re Benno*, 768 F.2d 1340, 1346, 226 USPQ 683, 686-87 (Fed. Cir. 1985). At the time the Rule 312 amendment was filed the claims had already been examined and allowed substantially as filed, and the subject matter added to the descriptive text by amendment was already in the allowed claims. The Manual of Patent Examining Procedure ("MPEP") § 608.01(1) (3d ed., rev. June 1968) states:

> § 608.01(1) In establishing a disclosure, applicant may rely not only on the description and drawing as filed but also on the original claims if their content justifies it.
>
> Where subject matter not shown in the drawing or described in the description is claimed in the case as filed, and such original claim itself constitutes a clear disclosure of this subject matter, then the claim should be treated on its merits, and *requirements made to amend* the drawing and description to show this subject matter. [emphasis added]

Although Datapoint's witnesses testified that the changes enlarged the scope of the claims, the claims as originally filed and as allowed were already of the challenged scope, and were already part of the disclosure. *Benno, supra. See Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 699, 218 USPQ 865, 871 (Fed. Cir. 1983), *cert. denied*, 464 U.S. 1043 (1984) (the scope of the patent is determined by the claims).

The district court described the MPEP as requiring a "heightened showing" for entry of Rule 312 amendments which affect the disclosure, citing MPEP § 714.16, which states:

> **§ 714.16.** As to amendments affecting the disclosure, the scope of any claim, or that add a claim, the remarks accompanying the amendment must fully and clearly state the reasons on which reliance is placed to show: (1) why the amendment is needed; (2) why the proposed amended or new claims require no additional research or examination; (3) why the claims are patentable and, (4) why they were not earlier presented.

The district court held that Sycor did not make the requisite statement of "reasons". The issue, however, is intent to deceive or mislead.

These amendments were not to the claims. The nature of these amendments was clear on their face, and the examiner was required to review them to determine whether they complied with law and practice. All the pertinent information was squarely before the examiner in a simple document. As stated in *Akzo N.V. v. United States Int'l Trade Comm'n*, 808 F.2d 1471, 1482, 1 USPQ2d 1241, 1247 (Fed. Cir. 1986), *cert. denied*, 482 U.S. 909 (1987), "the examiner was free to reach his own conclusion . . . ."

Although lapse on the part of an examiner does not exculpate an applicant whose acts are intentionally deceptive, *KangaROOS U.S.A. v. Caldor, Inc.*, 778 F.2d 1571, 1576, 228 USPQ 32, 35 (Fed. Cir. 1985), any doubt as to whether the examiner lapsed in his duty does not increase the burden on the applicant. Nor does the applicant's obligation of candor replace the examiner's duty to examine the claims. *Kingsdown*, 863 F.2d at 874 n.8, 9 USPQ2d at 1390 n.8.

Entry of a Rule 312 amendment requires both the recommendation of the primary examiner and approval by the Commissioner. 37 C.F.R. § 1.312, *supra*. The record shows that entry of these amendments was expressly approved. We do not think the attorney's words "typographical errors and other such discrepancies" in the introductory paragraphs of the amendment must be deemed to have diverted the examiner from mandatory review of the ensuing subject matter, in view particularly of the examiner's specific recommendation that the amendment be entered. It is presumed that public officials do their assigned jobs. *American Hoist & Derrick Co. v.*

Sowa & Sons. Inc., 725 F.2d 1350, 1359, 220 USPQ 763, 770 (Fed. Cir.), *cert. denied*, 469 U.S. 821 (1984).

The subjective nature of the factual determination of intent to deceive, which is the predicate to a holding of inequitable conduct, invites litigation and indeed had led to seemingly inconsistent decisions in the Federal Circuit. The district court here did not have the benefit of our guidance in *Kingsdown*, in which we sat *in banc* for the purpose, *inter alia*, of clarifying certain of our precedents. As stated therein:

> "Gross negligence" has been used as a label for various patterns of conduct.... We adopt the view that a finding that a particular conduct amounts to "gross negligence" does not of itself justify an inference of intent to deceive; the involved conduct, viewed in light of all the evidence, including evidence indicative of good faith, must indicate sufficient culpability to require a finding of intent to deceive. *See Norton v. Curtiss*, 433 F.2d 779, 167 USPQ 532 (CCPA 1970).

863 F.2d at 876, 9 USPQ2d at 1392.

The district court held that Sycor's misrepresentation of the nature of the amendment sufficed to support a holding of inequitable conduct before the Patent and Trademark Office. The district court described the attorney's communication as "disingenuous." The court stated that the "case law makes clear that, although a party's underlying conduct may be acceptable, that fact does not exculpate the party from an inequitable conduct finding [sic: holding] where the party misrepresented the nature of the underlying conduct to the PTO."

Intent to deceive should be determined in light of the realities of patent practice, and not as a matter of strict liability whatever the nature of the action before the PTO. *Accord Pfizer. Inc. v. International Rectifier Corp.*, 538 F.2d 180, 186, 190 USPQ 273, 278 (9th Cir. 1976), *cert. denied*, 429 U.S. 1040 (1977). "A patentee's oversights are easily magnified out of proportion by one accused of infringement...." *Id.* at 196, 190 USPQ at 286. Given the ease with which a relatively routine act of patent prosecution can be portrayed as intended to mislead or deceive, clear and convincing evidence of conduct sufficient to support an inference of culpable intent is required.

When all of the circumstances are considered, including indications of good faith, we are left with a definite and firm conviction that a mistake has been made regarding Sycor's state of mind when it filed its Rule 312 amendment in the Patent and Trademark Office. *Anderson v. City of Bessemer City. N.C.*, 470 U.S. 564 (1985); *Kingsdown*, 863 F.2d at 876, 9 USPQ2d at 1392; *FMC Corp. v. Manitowoc Co.*, 835 F.2d 1411, 1416, 5 USPQ2d 1112, 1116 (Fed. Cir. 1987) (intent must be determined in view of all the circumstances). Here, there was no failure of compliance with 37 C.F.R. §1.118(a), which states that:

> **§ 1.118(a).** All amendments to the specification, including the claims, and the drawings filed after the filing date of the application must conform to at least one of them as it was at the time of the filing of the application.

Even if Sycor's statement in its covering letter to the examiner was in error or negligent, the Rule 312 amendment was made as of right, authorized by MPEP § 608.01(l). This right weighs against an inference of intent to deceive the examiner into entering the amendment.

Accordingly, we conclude that the district court's finding that Sycor intended to mislead or deceive the Patent and Trademark Office is clearly erroneous. Thus we need not reach the question of materiality, for absent the element of intent the court's holding of inequitable conduct was legal error, and thus exceeded the court's discretionary authority. The holding of unenforceability on this ground is reversed.

IV

Inequitable Conduct - The Viatron 21 Device

Datapoint appeals the district court's ruling that Sycor did not commit inequitable conduct by not disclosing the Viatron 21 device to the patent examiner.

The patent applicant is required to advise the patent examiner of all information known to the applicant that "a reasonable examiner would consider important in deciding whether to allow the application to issue as a patent". 37 C.F.R. § 1.56(a) (1989). This requirement has grown in importance because of the highly technical nature of the subject matter of many patent applications, the difficulties inherent in searching the worldwide technical literature, and the

unique knowledge that the applicant may hold.

According to Datapoint, the existence of the Viatron 21 device became known to inventor Irwin during the time that Irwin was working on the invention of the '375 patent, including knowledge that the Viatron 21 used a tape cassette, albeit in a different system for data processing.

The district court found that the Viatron 21 device was not available as prior art. Datapoint does not on appeal challenge that finding, but merely calls the Viatron 21 "prior art" in arguing that it should have been disclosed. Since the Viatron 21 device was not prior art, it was not material to patentability. *Environmental Designs*, 713 F.2d at 698, 218 USPQ at 870. Absent materiality, inequitable conduct for failure to disclose can not lie.

The district court's determination on this point is affirmed.

V

Best Mode - 35 U.S.C. § 112

The district court held that claims 19-20, 22, and 24-28 of the '375 patent are invalid on the basis that Sycor concealed the best mode of carrying out the invention of these claims. Compliance with the best mode requirement is a question of fact, and is reviewed for clear error. *DeGeorge v. Bernier*, 768 F.2d 1318, 1324, 226 USPQ 758, 763 (Fed. Cir. 1985).

One of the objectives of the disclosed invention was to capture data "on magnetic tape cassettes of the general type presently finding extensive and widespread usage in audio entertainment equipment, but never heretofore used in datahandling apparatus." (Col. 1, lines 59-63.) The specification also stated that the invention includes cassettes "of the type which are almost universally available for audio purposes." (Col. 3, lines 32-33.) The district court, however, found that Sycor knew, in advance of filing the patent application, that standard audio tape was not the best mode for carrying out the invention. This finding is amply supported by the testimony of a former Sycor Vice-President- Engineering who was an employee of Sycor at the time the patent application was filed, and by other evidence, that Sycor purchased tape and cassettes of its own design and specifications and that these were different from standard audio tapes in their yield strength and magnetic characteristics.

Sycor argues that, at the time of the patent application, the 3M commercial audio tape that was on the market met its specifications. If so, it is this tape (or Sycor's own specifications) that had to be disclosed to satisfy the best mode requirement of 35 U.S.C. § 112, para. 1. While Sycor's argument may be relevant to enablement, it does not establish the best mode "contemplated by the inventor," which is a subjective inquiry. *See Spectra-Physic,. Inc. v. Coherent. Inc.*, 827 F.2d 1524, 3 USPQ2d 1737 (Fed. Cir. 1987); *see also Dana Corp. v. IPC Ltd. Partnership*, 860 F.2d 415, 8 USPQ2d 1692 (Fed. Cir. 1988).

The district court's determination on this point is affirmed.

VI

Enablement - 35 U.S.C. §112

Claims 1, 3, 5-7, 9-12, 14-20, 22, 29-33, 35-42, and 44 were held invalid for lack of enablement. The district court held that the patent specification did not contain an enabling disclosure of the software program used to carry out the claimed invention, stating that "the patent specification's lack of any information concerning the invention's programs would require a person reasonably skilled in the art of computer programming to experiment unduly in attempting to write programs for the '375 device."

35 U.S.C. § 112 ¶ 1 provides that:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same . . . .

Invalidity for lack of enablement is a conclusion of law and must be supported by facts proved by clear and convincing evidence, for the grant of the patent by the PTO carries with it the presumption of validity including compliance with § 112.

A decision on the issue of enablement requires determination of whether a person skilled in the pertinent art, using the knowledge available to such a person and the disclosure in the patent document, could make and use the invention without undue experimentation. It is not fatal if some experimentation is needed, for the patent docu-

ment is not intended to be a production specification. *In re Gay*, 309 F.2d at 774, 135 USPQ at 316. *See Atlas Powder Co. v. E.I. Du Pont De Nemours & Co.*, 750 F.2d 1569, 1576, 224 USPQ 409, 413 (Fed. Cir. 1984) (discussing the amount of experimentation).

When the challenged subject matter is a computer program that implements a claimed device or method, enablement is determined from the viewpoint of a skilled programmer using the knowledge and skill with which such a person is charged. The amount of disclosure that will enable practice of an invention that utilizes a computer program may vary according to the nature of the invention, the role of the program in carrying it out, and the complexity of the contemplated programming, all from the viewpoint of the skilled programmer. *See In re Sherwood*, 613 F.2d 809, 817, 204 USPQ 537, 544 (CCPA 1980), *cert. denied*, 450 U.S. 994 (1981). As the court observed in Sherwood, the writing of a program may require varying degrees of skill:

> In general, writing a computer program may be a task requiring the most sublime of the inventive faculty or it may require only the droning use of clerical skill. The difference between the two extremes lies in the creation of mathematical methodology to bridge the gap between the information one starts with ("the input") and the information that is desired ("the output").

613 F.2d at 816-17, 204 USPQ at 544.

The claimed invention of the '375 patent is not in the details of the program writing, but in the apparatus and method whose patentability is based on the claimed combination of components or steps. Further, experts for both sides testified that an experienced programmer could, without unreasonable effort, write a program to carry out the invention of the '375 patent. The possible design of superior software, or whether each programmer would work out the details in the identical way, is not relevant in determining whether the inventor has complied with the enablement requirement.

Expert witnesses testifying for Datapoint agreed that there were various ways of writing a program that would perform the '375 invention. Gordon Bell, Earle Pughe, and Fernando Corbato all testified that it would be relatively straightforward for a skilled

computer programmer to design a program to carry out the claimed invention.

In Bell's deposition testimony, contrary to his testimony at trial, he averred:

> Q. Would it have been obvious in June of '69 for someone of ordinary skill to write the program for a computer to operate as a source data entry terminal given the functions of the source data entry terminal?
>
> A. Yes.

Earle Pughe testified:

> Q. And could anybody have built — reasonably skilled in the art built a fixed-program read-only memory device with a source data entry program?
>
> A. Yes, sir.

Fernando Corbato, another Datapoint expert, testified:

> [T]here is a tremendous amount of lore and understanding that one must have in order to carry it out which depending on who you are dealing with may or may not be state of the art. To someone with a, a skilled computer designer, it would appear to be very, very straightforward to do anything that was described in the patent. He probably would have felt that he had already been doing that. The problem was I don't think the patent describes any novel configuration.

The district court referred in its opinion to the testimony of Kay Magleby that one skilled in the art of computer programming would be hindered because such a person could not tell where the program format would be loaded, what would be a typical program format, what characters would be used, or what would be the range or limitations of the format program. Sycor points out that the '375 patent specification states that the format program is stored in the delay line buffer memory. On cross-examination, Magleby acknowledged that the specification contains a description of how the format program is entered into the delay line buffer memory:

> So here [in the '375 patent] I see a description of how, whatever this format program is, is entered into the delay line

and stored on cassette tape.

In another exchange with Magleby:

> Q. Would one of ordinary skill have any difficulty in determining what the instruction format would be?
>
> A. I think one of ordinary skill could develop a product that would satisfy the claims of the patent.
>
> However, if there's something unique about this particular product as represented in the claims, then I think it should be explained clearly enough in the specification so that we can understand what's unique.

The format program is described in the specification as "character codes which are representative of and which initiate machine control functions." Datapoint's witness Professor Clark testified that additional information such as detailed flow charts, block diagrams, or source code listings were necessary in order to avoid spending experimental time. However, as noted in *Sherwood*, a description of such information may be adequate to a skilled programmer:

> In assessing any computer-related invention, it must be remembered that the programming is done in a computer language. The computer language is not a conjuration of some black art, it is simply a highly structured language. . . . [T]he conversion of a complete thought (as expressed in English and mathematics, i.e. the known input, the desired output, the mathematical expressions needed and the methods of using those expressions) into a language a machine understands is necessarily a mere clerical function to a skilled programmer.

613 F.2d at 817 n.6, 204 USPQ at 544 n.6. Although there have been circumstances wherein production of the computer program was not routine, as in *White Consol. Indus., Inc. v. Vega Servo-Control, Inc.*, 713 F.2d 788, 791, 218 USPQ 961, 963 (Fed. Cir. 1983), where the production of the program required one and one half to two person-years of work, such circumstances were not shown or suggested for the '375 invention.

The great weight of the expert testimony on both sides was that a programmer of reasonable skill could write a satisfactory program with ordinary effort. This requires the conclusion that the programs

here involved were, to a skilled programmer, routine. The district court's finding that undue experimentation was necessary to write the program is clear error.

The holding that the claims are invalid for lack of enablement is reversed.

VII

Infringement - 35 U.S.C. § 271

Datapoint challenges the district court's finding that claims 19, 20, 25-28, 35-37, 40-42, and 44 of the '375 patent are infringed.

The Excluded Evidence

Datapoint argues that the district court erred in finding infringement of claims 40-42 and 44, in that the court unfairly barred Datapoint from introducing evidence to rebut the testimony of Sycor's witness Dr. Larky with respect to the term "fixed program".

Datapoint states that the definition of "fixed program" was presented in the '375 patent and in pre-trial discovery as a program that was "not easily changeable" by the data entry operator, and that Larky changed the definition during his testimony to a program that was "not self-modifying and which the operator could not alter." Datapoint states that the latter definition is correct, but that this was a substantial change, and a surprise at trial. To support its position of non-infringement based on this definition, Datapoint sought to introduce, at trial, excerpts from its source codes. Datapoint states that the surprise definition of a fixed program made the source codes relevant.

Sycor objected to this proffered evidence, on the ground that the source codes were requested during discovery, were refused by Datapoint and, despite an order to compel production, were never produced. Sycor states that Datapoint did not object to Larky's testimony as surprise when it was given, or for four months thereafter, or offer during that period to produce this previously-withheld information. Indeed, the source codes were offered into evidence on the last day of Datapoint's testimony in chief.

On this history, we conclude that the district court did not abuse its discretion in refusing to receive this evidence. *United States v. Cohen*, 888 F.2d 770, 774 (11th Cir. 1989) ("Absent an abuse of discretion, evidentiary rulings of the trial court will stand.") The

court's trial management "should not be impeded by second guessing at the appellate level except in those rare instances when a clear abuse of discretion is firmly shown." *Rosemount*, 727 F.2d at 1549-50, 221 USPQ at 10 (upholding exclusion of expert testimony where expert not identified before trial despite court order).

We have carefully considered Datapoint's arguments and authorities, but Datapoint has not shown that the circumstances of this case show prejudicial error, or exceeded the trial court's discretionary authority. The exclusion of the source codes is not grounds for reversal or other remedial action.

The Burden of Proof

Datapoint argues that the district court shifted to Datapoint the burden of proving non-infringement, rather than requiring Sycor to meet its burden of proving infringement by a preponderance of evidence. Datapoint contends that it adequately showed at trial that the accused programs were self-modifying (i.e., not "fixed") in that they used "overstoring," and thus that Sycor had not met its burden of proof.

Sycor had provided evidence, through the testimony of its expert witnesses, that each element or step of the claims was embodied in Datapoint's equipment and method. The court thus directed its attention to Datapoint's defenses, stating in its opinion:

> The court recognizes that Sycor has the burden of proving by a preponderance of the evidence that Datapoint has infringed the '375 patent by Datapoint's hardware- software equipment combinations. Nevertheless, Datapoint has purported seriously to challenge Sycor's expert testimony in six areas. The court has therefore determined to approach the infringement issues, not from the standpoint of Sycor's affirmative assertions, but from Datapoint's defensive assertions. Except to the extent the court finds non-infringement in its findings below, the court is satisfied that, were the patent valid and enforceable, Sycor's evidence is otherwise sufficient to prove infringement by a preponderance of the evidence.

This statement does not support Datapoint's position that the district court required Datapoint to prove non-infringement by a preponderance of evidence.

In its defense Datapoint had presented evidence that there are three types of overstoring: overlays, the DOS interrupt handler, and the NOP JUMP instruction. The district court's opinion discusses the technological details, which need not be repeated here. The district court found that although the accused Datapoint devices had the capability of overstoring, Datapoint did not show that this capability was used. The court found that Datapoint had not shown that such overlays must occur in the DOS, and the court found that any possible use of overlays was not adequately explained. The court also found that Datapoint's DATASHARE interpreters use overlays, but that the evidence presented did not show sufficiently clearly that the overlays must be used. The court further found that the NOP JUMP instruction could not be used in most of the accused programs. While Datapoint contends that these findings show that the burden of proof was shifted to it, Datapoint has not shown that the trial court wavered from correct application of the burdens.

The court found in favor of Datapoint that the DATABUS IS interpreter 32K memory device was not a fixed program, and did not infringe. Sycor does not challenge this holding. However, Datapoint makes the argument that none of its products infringe because "Datapoint users have the option to program any Datapoint DATASHARE or DATABUS system for at least part of its hardware configuration". Datapoint refers to certain pages in its user manuals, one of which describes a "default configurator" that permits the user "to configure the run-time characteristics of his DATABUS interpreter," and another of which states that it "supports many configurations . . . via configuration options".

Sycor responds that the term "operational configuration" of claim 40, understood in light of the '375 patent specification, means at least the peripheral configuration of the terminal, such as input, output, and recording devices. Sycor explains that the fixed program of the '375 patent provides control for a given combination of specific peripherals, i.e., the hardware configuration, and contains the definitions of various keys, defined through the execution of the ROM program to initiate the action of the peripheral devices.

These arguments were generally before the district court. Datapoint has not met its burden of showing that the district court clearly erred in its findings. The information in Datapoint's user manuals on

possible hardware or peripheral configuration at the user's option may, as Datapoint states, show that additional functions may be performed, but does not show clear error in the district court's holding that infringement of these claims was established by a preponderance of the evidence.

Claims 35-37

While the parties dispute whether Datapoint used the phrase "reverse doctrine of equivalents" at trial, we agree with Datapoint that the substance of the argument was raised. Datapoint argued that even if these claims appear to read literally on the Datapoint equipment, the products are changed in such substantial ways from that described in the '375 patent that infringement can not be found. *See SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1123, 227 USPQ 577, 587 (Fed. Cir. 1985) (*in banc*) (discussing the reverse doctrine of equivalents).

Datapoint states that its accused products are general purpose computers, rather than a special purpose terminal using a replaceable, hard-wired ROM, as contemplated in the '375 patent. Datapoint argues, as it did at trial, that its products are capable of processing data as the data are entered, and therefore that its products are not source data entry terminals. Datapoint states that its devices are so changed that, despite a literal reading of the claims on these devices, infringement is avoided under the "reverse doctrine". The district court agreed that Datapoint's products have some features in common with general purpose computers, but held that these features did not defeat infringement.

The addition of features does not avoid infringement, if all the elements of the patent claims have been adopted. *Radio Steel & Mfg. Co. v. MTD Prods.*, 731 F.2d 840, 848, 221 USPQ 657, 663-64 (Fed. Cir.), *cert. denied*, 469 U.S. 831 (1984). Nor is infringement avoided if a claimed feature performs not only as shown in the patent, but also performs an additional function. *Id.* at 848, 221 USPQ at 664. We have carefully considered Datapoint's argument that its hardware is "quite different" from that described in the '375 patent. We conclude that Datapoint has not shown clear error in the district court's finding of infringement by a preponderance of evidence.

Datapoint blames the success of Sycor's position as to infringe

ment on the subject matter entered into the descriptive portion of the specification by the challenged Rule 312 amendment, see Part III *ante*. Sycor asserts that the district court did not adopt whatever enlarged claim interpretation Datapoint states Sycor intended to obtain through the Rule 312 amendment. Datapoint directs us to no apparent reliance by the district court on the descriptive text as modified under Rule 312.

Datapoint has shown no clear error in the district court's findings of infringement. The holding of infringement is affirmed.

VIII

Laches

Datapoint asserts that the district court erred in not finding material prejudice due to Sycor's asserted period of inaction in enforcing the '375 patent. The district court did not decide the question of laches, stating: "That the court has found for Datapoint today precludes a finding of material prejudice." Because we have reversed the majority of the rulings in favor of Datapoint, the defense of laches may require resolution. The issue is pertinent to the assessment of damages because it may affect the period of recovery for infringement. *See Sun Studs, Inc. v ATA Equip. Leasing, Inc.*, 11 USPQ 2d 1479, 1479 (Fed. Cir. 1989) (remanding for determination of laches).

The merits of the issue were not argued on this appeal, both sides agreeing that remand to the district court would be appropriate. Thus during the damages phase the court may consider the question of laches if it is duly raised.

IX

Other Issues

We have considered all the additional issues and arguments raised in the appeal and the cross-appeal. None changes the views expressed and decisions reached herein.

Costs

Taxable costs shall be assessed in favor of Northern Telecom.

Summary

Claims 19-20, 22 and 24-28 are invalid for failure to disclose the best mode. Claims 35-37, 40-42, and 44 are not invalid, are enforceable, and are infringed.

The cause is remanded for further proceedings consistent herewith.

AFFIRMED IN PART, REVERSED IN PART, AND REMANDED

United States Court of Appeals for the Federal Circuit

89-1034, -1035

NORTHERN TELECOM, INC.,

Plaintiff-Appellant,

v.

DATAPOINT CORPORATION,

Defendant/Cross-Appellant.

NEWMAN, *Circuit Judge*, concurring in part, dissenting in part.

I share the court's opinion as to Parts I through IV, and VI through IX. I respectfully dissent from the holding in Part V that certain claims are invalid for failure to comply with the "best mode" requirement of 35 U.S.C. § 112.

A holding of invalidity on this ground requires that the inventor knew of and concealed a better mode than was disclosed in the patent application. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384-85, 231 USPQ 81, 94 (Fed. Cir. 1986). It is facile, and erroneous, to infer that information not included in a patent application was necessarily concealed. Patent applications rarely contain every detail, for that is not their function, but infringers constantly seek to enlarge any omission into a fatal flaw. Challenge is easy; the penalty is extreme. Thus precedent requires that violation of the "best mode" provision be established by clear and convincing evidence. *Hybritech*, 802 F.2d at 1384, 231 USPQ at 94.

The fatal flaw with which Sycor was charged was the statement in the patent specification that standard audio tape cassettes were used

to record the data, the district court holding that Sycor knew that standard audio tape was not the best mode. At the trial witnesses testified that commercial audio tape was used to record the data, that these tapes varied in quality, and that not all worked equally well. There was in evidence a document showing Sycor's specification of commercial tape parameters, including tests of tapes made by K/Tronics, TDK, 3M (Scotch brand), and ongoing tests of BASF tapes. The district court referred to Datapoint's contention that "Sycor knew at the time of filing the '375 patent application that this cassette specification was needed to practice the best mode", and held that "Sycor did not disclose the best mode". With respect to the 3M tape referred to by the panel majority, Sycor stated that the 3M tape met all of the parameters set out in its tape specification; while Datapoint argued that the 3M tape "apparently failed". The district court did not identify the 3M tape, or any other, as the best mode.

On this record, there was not clear and convincing evidence of concealment of a better mode known to the inventor. Nor was there any finding of concealment. It was undisputed that the specification of commercial audio tape parameters was prepared by Sycor for distribution. Distribution is inimical to concealment.

To determine whether an asserted omission amounts to concealment, such omission should be considered in light of all the circumstances. For example, consideration should be given to whether the omitted information was publicly known or readily ascertainable; whether there was any benefit to the patentee of concealment — or the absence of benefit; the materiality of the information; whether the interested public was actually prejudiced; and any evidence tending to show good or bad faith. In this case, each of these factors weighs on the side of Sycor.

It was undisputed that persons of ordinary skill were aware of differences among commercial audio tapes. As was stated in *In re Karnofsky*, 390 F.2d 994, 997, 156 USPQ 682, 685 (CCPA 1968):

> Where one of ordinary skill in the art would know how to select operating conditions so as to achieve a particular result, the failure to include a recitation of some specific operating conditions in the specification cannot give rise to a rejection either under the "enabling" or under the "best mode" requirement' of 35 U.S.C. § 112.

A patent document is not a "production specification". *In re Gay*, 309 F.2d 769, 772, 135 USPQ 311, 315 (CCPA 1962); *Manual of Patent Examining Procedure* § 608.01(h) (8th ed. May 1988). It seems to me that the information on commercial audio tape parameters is not untypical of work that is done after an invention has been made, when development continues and data accumulate, often concurrently with patent application work. When the patent specification is fully enabling, the failure to include information that is not necessary either to describe or to enable the claimed invention should not invalidate the claims under the "best mode" provision, unless the information was withheld for the purpose of concealment of a better mode.

I would reverse the trial court's holding as based on incorrect law and the absence of clear and convincing evidence of failure to meet the "best mode" requirement.

United States Court of Appeals for the Federal Circuit

89-1034,-1035

NORTHERN TELECOM, INC.,

Plaintiff-Appellant,

v.

DATAPOINT CORPORATION,

Defendant/Cross-Appellant.

ORDER

ORDER

Before MARKEY, Circuit Judge, NEWMAN, Circuit Judge, and ARCHER, Circuit Judge.

Petition for rehearing having been filed in this case,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for rehearing be, and the same hereby is, denied.

The suggestion for rehearing in banc is under consideration.

The mandate will issue on August 9, 1990.

FOR THE COURT,

Dated: August 2, 1990

/s/ Francis X. Gindhart
Francis X. Gindhart
Clerk

cc: DONALD R. DUNNER
JERRY R. SELINGER

NORTHERN TELECOM V DATAPOINT CORP, 89-1034
(DCT - 3-82-1039-D)

Note: This order has not been prepared for publication in a reporter.

IN THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF TEXAS DALLAS DIVISION

NORTHERN TELECOM, INC.,	§	
	§	
Plaintiff/	§	
Counterdefendant,	§	
	§	
	§	Civil Action No.
VS.	§	CA3-82-1039-D
	§	
DATAPOINT	§	
CORPORATION,	§	
	§	
Defendant/	§	
Counterplaintiff.	§	
	§	
	§	

MEMORANDUM OPINION

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FITZWATER, District Judge:

The instant patent infringement action and counterclaim for a declaratory judgment of patent invalidity and unenforceability were tried to the court in what is certainly one of the longest civil trials in this district. The trial consumed 70 separate days during a period beginning January 20, 1987 and ending July 2, 1987. The parties introduced thousands of pages of exhibits and the transcript numbers several thousand pages. Following extensive post-trial briefing, the court has deliberated on the evidence and considered the legal issues presented. For the reasons that follow,[1] the court finds and concludes that the patent in suit, U.S. Patent No. 3,760,375 (the '375 patent), filed June 13, 1969 and issued September 18, 1973, entitled "Source Data Entry Terminal," is invalid and unenforceable, and that certain claims are anticipated and made obvious by the prior art. The court also finds and concludes that the accused Datapoint devices infringe claims 14, 19, 20, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 41, 42, and 44 of the patent in suit. The court finds that the DATABUS interpreter on 32K memory equipment does not infringe claim 40 (and its dependencies). Claims 1, 3, 5, 6, 7, 9, 10, 11, 12, 15, 16, 17, 18, and 22 are not infringed. Claims 2, 4, 8, 13, 21, 23, 34, 43, 45, and 46 are not in issue. Accordingly, the court has today entered judgment in favor of Datapoint.

I.

BACKGROUND

Plaintiff, Northern Telecom, Inc. ("NTI"), the successor-in inter-

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1 As permitted by Fed. R. Civ. P. 52(a), the court sets forth in this memorandum opinion its findings of fact and conclusions of law.

Because of the volume of evidence (both testimony and exhibits), the court has decided only the controlling issues presented by the parties' requested findings of fact and conclusions of law. The court assumes that, if a party did not request a fact finding or conclusion of law as to a particular issue, the party did not consider the issue to be essential to its case-in-chief or defense to the opposing party's claim or counterclaim.

est[2] to Sycor, Inc. ("Sycor"), the patent assignee, sues defendant, Datapoint Corporation ("Datapoint"), contending Datapoint has infringed the '375 patent by its manufacture and sale of 11 families of Datapoint processors that use various combinations of Datapoint software. NTI also alleges that Datapoint is liable for inducement to infringe and contributory infringement. Datapoint counterclaims, seeking to invalidate and declare unenforceable the patent in suit. NTI bottoms its infringement action on 36 claims of the patent, including five independent claims and 31 dependent claims. Two independent claims (1 and 19) are device claims and three (24, 29, and 40) are method claims.

Claim 1 reads as follows:

> A source data entry terminal device for capturing and storing data for future processing or the like, comprising in combination: a keyboard data entry means for producing coded alphanumeric data representative of different keys upon actuation thereof; an optical display means for visual character read-out of such data; means for coupling coded data entered into said terminal to a data recorder or reproducer means; and a programmed microprocessor interfaced to each of said entry means, said display means and said coupling means; said microprocessor including a fixed-program read-only memory and a central logic unit embodying substantially all of the control logic for said entry means and display means; said read-only memory having a built-in program dedicating the terminal to a particular functional configuration and establishing an instruction set which timeshares said central logic unit with said entry means and display means to control the same in conformance with such functional configuration.

Dependent upon claim 1 are claims 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, and 15.

Claim 19 reads as follows:

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2 Datapoint alleges that NTI does not own the rights to the '375 patent and thus has no right to maintain this action. The court finds and concludes that title to the patent has been effectively transferred from the inventors to NTI and thus rejects this argument.

A source data entry terminal device for capturing and storing data for future processing or the like, comprising in combination: a keyboard data entry means for producing coded alphanumeric data representative of different keys upon actuation thereof; an optical display means for visual readout of data characters entered by said keyboard means; a magnetic tape recorder/reproducer means including at least one cassette-type magnetic tape magazine for recording data thereon entered by said keyboard and read out by said display; and control means interfaced to said data entry means, said optical display means and said recorder/reproducer means and intercoupling the same for cooperative operation such that data entered by said keyboard means is visually displayed and magnetically recorded on said cassette tape magazines.

Dependent upon claim 19 are claims 20, 21, 22, and 23.

Claim 24 reads as follows:

A method of source data capture, comprising the steps: generating coded signals representative of source data desired to be captured; and recording signals corresponding to those generated upon magnetic tape enclosed within cassette tape cartridges of the basic type conventionally used for audio recording.

Dependent upon claim 24 are claims 25, 26, 27, and 28.

Claim 29 reads as follows:

A method of source data capture, comprising the steps: generating coded signals representative of alphanumeric source data desired to be captured; visually displaying the data of which said signals are representative by use of such signals; using a buffer memory to temporarily store the data being displayed; and recording the data on magnetic tape after the data has been visually displayed.

Dependent upon claim 29 are claims 30, 31, 32, 33, 34, 35, 36, 37, 38, and 39.

Claim 40 reads as follows:

A method of implementing a source data entry terminal device, comprising the steps: connecting selected input/output

peripheral components including at least a keyboard data entry means and a visual data display means to a buffer memory and to a central processor organization, and using said buffer memory for temporary storage of data entered by said keyboard means; incorporating control logic for all such peripheral components in the central processor and controlling each such component by the central processor, such that said peripheral components need have substantially no local control logic of their own; and dedicating the terminal to a given operational configuration by incorporating a fixed program in said central processor.

Dependent upon claim 40 are claims 41, 42, 43, 44, 45, and 46. Claims 2, 4, 8, 13, 21, 23, 34, 43, 45, and 46 are not in issue in the case.

The patent contains the following four figures:

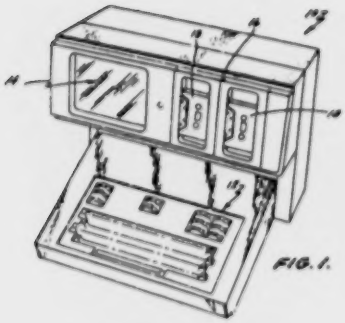

FIG. 1.

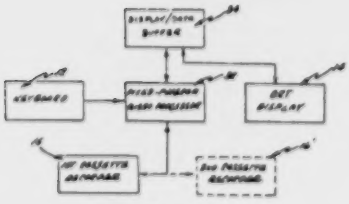

FIG. 2.

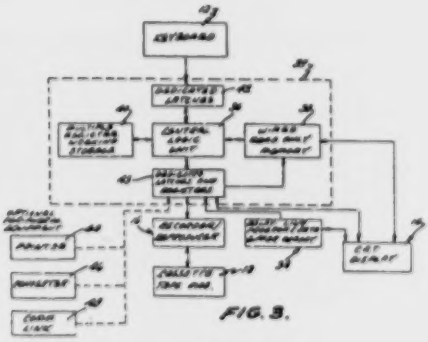

FIG. 3.

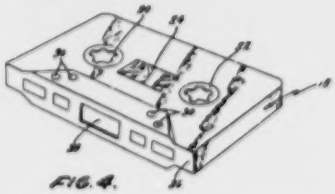

FIG. 4.

Datapoint alleges that it has not infringed the '375 patent, and counterclaims for patent invalidity and unenforceability, contending NTI's predecessor-in-interest, Sycor, committed inequitable conduct and fraud on the Patent and Trademark Office ("PTO") in obtaining the patent in suit and failed adequately to disclose the invention. Datapoint asserts that Sycor did not comply with 35 U.S.C. § 112 because it failed to distinctly claim the subject matter which it regards as its invention; failed to disclose the best mode contemplated for carrying out the invention; and failed in the patent specification to enable one skilled in the art to make and use the invention. Datapoint also contends the invention was anticipated in and made obvious by the prior art. Datapoint posits that NTI is guilty of laches because it failed to file this infringement action until 1982, when NTI knew of any alleged infringing activity in 1976.[3]

II.
UNENFORCEABILITY AND INVALIDITY
A.

Datapoint alleges that the '375 patent is unenforceable because Sycor, NTI's predecessor-in-interest, engaged in inequitable conduct in its prosecution of the patent application.

To demonstrate that Sycor committed inequitable conduct, Datapoint must prove by clear and convincing evidence (1) that Sycor misrepresented or failed to disclose material information regarding the '375 patent and (2) that Sycor did so with the required level of mental culpability. *See In re Jerabek*, 789 F.2d 886, 889 (Fed. Cir. 1986). The materiality threshold can be established by any of four tests (*see* discussion *infra* at § II (A) (8) (c)), but the appropriate starting point is whether "there is a substantial likelihood that a reasonable [PTO] examiner would have considered the omitted reference or false information important in deciding whether to allow the application to issue as a patent." *J. P. Stevens & Co., Inc. v. Lex Tex Ltd., Inc.*, 747 F.2d 1553, 1559 (Fed. Cir. 1984), *cert. denied*, 474 U.S. 822 (1985). Materiality and intent must be considered together:

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3 Datapoint also contends NTI does not have legal ownership of the patent, a proposition the court has rejected *supra* at note 2.

the more material the omission or misrepresentation, the less intent that must be shown to reach a conclusion of inequitable conduct. *Akzo. N.V. v. U.S. International Trade Commission*, 808 F.2d 1471, 1481-82 (Fed. Cir. 1986), *cert. denied*, ___ U.S. ___, 107 S.Ct. 2490 (1987).

With respect to the required level of mental culpability, Datapoint need not prove by direct evidence that Sycor acted with specific fraudulent intent. Intent may also be proven by showing acts, the natural consequences of which are presumed by the actor. *J. P. Stevens*, 747 F.2d at 1560. Moreover, proof of deliberate scheming is not needed; gross negligence is sufficient. *Id.* Gross negligence is present when the actor, judged as a reasonable person in his position, should have known the materiality of a withheld reference. *Id.* (citing *Driscoll v. Cebelo*, 731 F.2d 878, 885 (Fed. Cir. 1984); *Kansas Jack, Inc. v. Kuhn*, 719 F.2d 1144, 1151 (Fed. Cir. 1983)). On the other hand, simple negligence, oversight, or an erroneous judgment made in good faith are insufficient. *J. P. Stevens*, 747 F.2d at 1560.

If Datapoint satisfies the threshold levels of materiality and mental culpability, the court then balances the level of materiality against the level of intent to determine whether Sycor committed inequitable conduct. *Hycor Corp. v. Schlueter Co.*, 740 F.2d 1529, 1539 (Fed. Cir. 1984). A lesser showing of materiality of misrepresented information may suffice when an intentional scheme to defraud is established; a greater showing of materiality would necessarily create an inference that its nondisclosure was wrongful. *American Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1363 (Fed. Cir.), *cert. denied*, 469 U.S. 821 (1984) (quoting *Digital Equipment Corp. v. Diamond*, 653 F.2d 701, 716 (1st Cir. 1981)). The precise balancing formulation apparently can vary according to the materiality test employed. *See American Hoist*, 725 F.2d at 1363.

-1-

Datapoint contends Sycor is guilty of inequitable conduct because it failed to disclose in the '375 patent application four prior Sycor patent applications that pertained to recording digital data on audio tape cartridges. Datapoint alleges that the other patents were material to the '375 patent application and that Sycor breached its duty of candor and good faith in dealing with the PTO when it failed to

disclose the patents. NTI counters that the patents were not material because they involved *spindle* cassette drive digital recording technologies and the '375 patent pertains to a *capstan* cassette drive. The court finds that Datapoint has failed to prove inequitable conduct by clear and convincing evidence.

Datapoint has advanced what is essentially a best mode argument concerning *spindle*-driven audio cassette cartridges versus *capstan* cassette tape drives. The court concludes that a reasonable PTO examiner would not have considered the patents material because, as the court explains *infra* at § 11(C)(1), Sycor complied with the 35 U.S.C. § 112 best mode requirement as it pertained to the cassette tape drive mechanism.[4] Moreover, given the low degree of materiality, Datapoint was required, but failed, to prove a high level of intent or gross negligence. Sycor's failure to disclose the four patents was not shown to be intentional or grossly negligent so as to offset the lack of materiality of the undisclosed information.[5]

-2-

Datapoint contends Sycor's failure to disclose the existence of the Viatron Systems Corporation ("Viatron") Viatron 21 constituted inequitable conduct. The court disagrees.

The court has found *infra* at § 15(E) (22) that the Viatron II is not prior art to the '375 patent. Datapoint has failed otherwise to show by clear and convincing evidence that a reasonable examiner would consider the Viatron II important in deciding whether to issue the '375 patent. Datapoint has also failed to prove that Sycor had a culpable mental state in not disclosing the Viatron 21. Absent the requisite materiality and intent, the court holds that Sycor's failure to disclose

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4 This is to be distinguished from the court's holding infra at § II(C)(3) that Sycor did not disclose the best mode with respect to the magnetic tape itself (as opposed to the tape drive mechanism). The court understands Datapoint's instant inequitable conduct argument, however, to be directed only at the failure to disclose tape drive technology.

5 Datapoint also urges a slightly modified version of this argument. Datapoint argues that Sycor misrepresented the identities of the actual inventors of the technology in the '375 patent because the best mode was in fact the technology disclosed by the four prior Sycor patents. This argument likewise fails for the reasons stated above.

the Viatron 21 did not constitute inequitable conduct.

-3-

Datapoint contends Sycor committed inequitable conduct by not intentionally or negligently failing to disclose in the '375 patent application the existence of the Hewlett-Packard HP 2116 ("HP 2116"), a general purpose computer. Defendant did not prove this assertion by clear and convincing evidence.

Sycor disclosed to the PTO the existence of other general purpose computers like the HP 2116 when it disclosed U.S. Patent No. 3,406,371, Amdahl et al. (the "Amdahl patent"). The '375 patent application refers to and distinguishes itself from other general purpose computers and a reference to the HP 2116 would thus have been merely cumulative. Because a cumulative reference is not material, *see J. P. Stevens,* 747 F.2d at 1559-60; *Kimberly-Clark Corp. v. Johnson & Johnson,* 745 F.2d 1437, 1455- 1456 (Fed. Cir. 1984), it was incumbent upon Datapoint to prove that the HP 2116 was more relevant than the other general purpose computers Sycor disclosed.

Datapoint apparently assumes the HP 2116 was more relevant because co-inventor Samuel Irwin ("Irwin") knew the HP 2116 could be modified with a Philips cassette recorder peripheral. Datapoint has not proven that Irwin knew the HP 2116 could be so modified.

Irwin was employed by Hewlett-Packard as a computer marketing consultant while Hewlett-Packard was developing the HP 2116. (Tr. 4:97; 39:105).[6] During this period Hewlett-Packard considered using a Philips cassette recorder as a peripheral to the HP 2116, but finally rejected this idea. (Tr. 39:162). One Hewlett-Packard employee, Steve Porter ("Porter"), did regularly use such a modified HP 2116 at work. Although Irwin daily worked in the same building where Porter used the modified HP 2116, Datapoint did not produce evidence that persuades the court that Irwin actually saw or worked with the device.

Because the court has not found that Sycor intentionally, or by

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6 Trial record references are cited throughout this memorandum opinion by volume and page. The court has converted to arabic numerals those record volumes designated by the court reporter by Roman numerals.

gross negligence, failed to disclose the HP 2116 or that such non-disclosure was material, the court rejects this inequitable conduct argument.

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Datapoint next contends Sycor committed inequitable conduct by not disclosing in the '375 patent application the existence of the Digital Equipment Co. PDP-8, a general purpose computer. As the court notes *supra* at § II(A)(3) regarding the H.P. 2116, Sycor did disclose to the PTO the existence of other general purpose computers like the PDP-8 when Sycor disclosed the Amdahl patent. Because the '375 patent application distinguishes itself from other general purpose computers, a reference to the PDP-B would have been merely cumulative, and thus is not material. See *J. P. Stevens*, 747 F.2d at 1559-1560; *Kimberly-Clark*, 745 F.2d at 1455-1456. Datapoint may contend the PDP-8 was more relevant than other general purpose computers. It alleges that "Mr. Irwin intended his '375 device to compete in the same market as the PDP-8." Datapoint has completely failed, however, to support this allegation, as the record citations that Datapoint advances are irrelevant to Irwin's intent to compete.

Datapoint also has not shown that Sycor intentionally (or even through gross negligence) failed to disclose the PDP-8. The court rejects this inequitable conduct argument.

-5-

Datapoint next attempts to predicate an inequitable conduct argument on Sycor's failure to disclose the Scientific Data Systems, Inc. ("SDS") model SDS 910, 920, and 930 computers. The court rejects this argument because Datapoint has failed to persuade the court that these devices would have been material to a reasonable PTO examiner. Absent clear and convincing evidence regarding materiality, the omission is not shown to be inequitable.

-6-

Datapoint next contends that Sycor's failure to disclose the existence of the Data Systems, Inc. DSI 2000 computer in the '375 application constitutes inequitable conduct. The court disagrees. Datapoint has failed to persuade the court that there is a substantial likelihood that a reasonable PTO examiner would have considered

the DSI 2000 important in deciding whether to allow the '375 application.

-7-

Datapoint next argues that Sycor committed inequitable conduct by misrepresenting the content of patent claims 29 and 40 in attempting to distinguish a cited prior art reference. The court finds no inequitable conduct under the clear and convincing evidence standard.

In a response filed with the PTO on January 25, 1971, Sycor distinguished a cited prior art reference by representing that:

> Perhaps even more importantly, none of the references of record appears to anticipate in any way the use of a *fixed-program read-only memory*, and this component is of the very essence of this invention, with all independent claims other than [claims 19 and 24] including recitations of this component.

(PX 2 at 51). (Emphasis added). As NTI admits, this statement is incorrect. Two of the independent claims, claims 29 and 40, clearly contain no reference to a "fixed-program read-only memory." Datapoint contends the representation is so material that whether it was intentionally or negligently made it constitutes inequitable conduct rendering the '375 patent unenforceable in its entirety. NTI responds that the error was inadvertent and not misleading and therefore does not constitute inequitable conduct.

The court finds the misrepresentation was not material. The statements are contained in one sentence of a 9-page response to the PTO. Sycor does not thereby attempt to alter or redefine claims 29 and 40, and the statement would be recognized as obviously wrong when compared by the PTO examiner with the actual claim language. The court finds further that the misrepresentation was nothing more than an isolated, inadvertent mistake. Datapoint has failed to show that the misrepresentation was intentional, or grossly negligent, to such a degree as to counterbalance low materiality.

-8-

Datapoint alleges that Sycor committed inequitable conduct by misrepresenting that five amendments made to the '375 patent were primarily to correct typographical errors and other such discrepan-

cies and that the amendments "merely add to the clarity and readability of the specifications." The amendments in question pertained to whether the '375 invention's memory or program was "hardwired." For the reasons that follow, the court finds by clear and convincing evidence that the conduct in question was inequitable and that, as a matter of law, the '375 patent is thereby rendered unenforceable.

-a-

On July 26, 1973, the PTO issued a notice of allowance for the '375 patent in which the PTO stated (1) its belief that the application was valid and (2) its intent to issue the patent once the applicant paid the fee. Instead of immediately paying the issuance fee, Sycor moved to amend the '375 patent under PTO Rule 312, 37 C.F.R. § 1.312 (available at 34 Fed. Reg. 6843-44 (1969)), which stated:[7]

> Amendments after the notice of allowance of an application will not be permitted as a matter of right. However, such amendments may be made if filed not later than the date the issue fee is paid, on the recommendation of the primary examiner, approved by the Commissioner, without withdrawing the case from issue.

In Sycor's request for the Rule 312 amendment, Sycor stated:

> The present amendment under Rule 312 is primarily for the purpose of correcting *certain typographical errors* and other such discrepancies noted in the specification upon a final review of the same, immediately prior to payment of the issue fee. The errors and discrepancies sought to be corrected by this amendment were not noticed previously, and thus could not have been corrected before the present time; because the corrections *merely add to the clarity and readability* of the specifications, entry of the amendment is believed to be in order and is solicited.

(Pl. Ex. No. 2, p. 134). (Emphasis added). Sycor's application requested 25 specific amendments to the '375 patent. The five amendments to which Datapoint objects (with the added material underlined) are:

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7 37 C.F.R. § 1.132 was amended in 1982.

1) a wired *or like* read-only memory (PX 1, col. 2, l. 11);

2) read-only memory containing a hardwired *or otherwise fixed* program (PX 1, col. 2, l. 11);

3) a hardwired or fixed program (PX 1, col. 2, l. 17);

4) a wired *or like* ROM *of the form just mentioned* is unalterable (PX 1, col. 8, l. 15); and

5) the wired-in (*or otherwise fixed*) program in the ROM (PX 1, col. 9, l. 54).

On September 15, 1973, the PTO accepted the Rule 312 amendments.

Datapoint contends Sycor misrepresented the amendments as "typographical errors" when in fact the amendments were

> departures from or additions to the original disclosure, and were intended to alter in material respects the original disclosure and the scope of the claims as allowed by the Patent Office Examiner prior to the Rule 312 Amendment, by removing the limitation in independent claims 1 and 40 that the "fixed program" be physically fixed in a hardwired ROM.

NTI responds that the '375 patent's independent claims clearly include not only a wired fixed-program read-only memory, but all types of fixed-program read-only memories. NTI contends the amendments to the specification were not only allowable, but were required in order to conform the specification to the independent claims.

As the court has explained above, inequitable conduct requires proof by clear and convincing evidence of a threshold of materiality of the nondisclosed information and of the prosecutor's intent. Once the thresholds of materiality and intent are established, the court then conducts a balancing test to determine whether the scales tilt to a conclusion that inequitable conduct occurred. *In re Jerabek*, 789 F.2d at 889-90; *American Hoist*, 725 F.2d at 1363-64.

-b-

The court finds first that Sycor misrepresented to the PTO that the five amendments were "primarily for the purpose of correcting certain typographical errors and other such discrepancies noted in the specification" and that the amendments "merely add to the clarity and

readability of the specifications." The amendments neither cured "typographical" errors nor increased the "clarity" or "readability" of the specification. Instead, they changed the actual meaning of the specification and thus amounted to substantive changes.

-c-

The court next determines that the misrepresentations were material.

The Federal Circuit "has rejected any single test for 'materiality' in determining inequitable conduct." *Argus Chemical Corp. v. Fibre Glass-Evercoat Co.*, 759 F.2d 10, 14 (Fed. Cir.), cert. denied, 474 U.S. 903 (1985). It has instead recognized that the inequitable conduct threshold can be established by any of four tests. *J. P. Stevens*, 747 F.2d at 1559. The first is an *objective* "but for" test — that the misrepresentation was so material that "but for" the misrepresentation the patent would not have issued. The second test is the *subjective* "but for" test — the misrepresentation caused the patent examiner to approve the patent application when he would not have otherwise done so. The third test has been labeled the "but it may have been" test — in the course of the patent prosecution, the misrepresentation might have influenced the examiner. The fourth test is the PTO test, which arises from PTO Rule 56(a). *See* 37 C.F.R. § 1.56(a) (1987). This test asks "whether there is a substantial likelihood that a reasonable examiner would have considered the omitted reference or false information important in deciding whether to allow the application to issue as a patent." *J. P. Stevens*, 747 F.2d at 1559; *American Hoist*, 725 F.2d at 1362. The PTO standard is the "appropriate starting point" for any materiality analysis because it is the broadest test and encompasses the first three tests. The PTO standard also most closely aligns with how one ought to conduct business with the PTO. *Id.*[8] at 1363. Accordingly, the court applies the PTO test in the instant case.

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8 No single inequitable conduct materiality standard has arisen because inequitable conduct analysis requires that the materiality of the misrepresentation be balanced with the prosecutor's intent in making the misrepresentation. Where the misrepresentation meets an objective "but for" materiality inquiry -- that is, but for the misrepresentation the patent would not have issued — a lower level of intent is required to prove inequitable conduct. Coversely, where a reasonable, examiner would have considered the information important, but not crucial, to his

At the time Sycor applied for the Rule 312 amendments, the Manual of Patent Examining Procedure contained an in-depth explanation of the PTO's procedures for considering such amendments. The Manual stated that "[a]fter the Notice of Allowance has been mailed, the application is technically no longer under the jurisdiction of the Primary Examiner." Patent and Trademark Office, U.S. Department of Commerce, *Manual of Patent Examining Procedure* § 714.16 (3d ed., rev. July 1967) [hereinafter PTO Manual]. According to PTO Manual § 714.16, Sycor could not have demanded consideration of these amendments "as a matter of right."

> Prosecution of a case should be conducted before, and thus be complete including editorial revision of the specification and claims at the time of the Notice of Allowance. However, where amendments of the type noted are shown (1) to be needed for proper disclosure or protection of the invention, and (2) to require no substantial amount of additional work on the part of the [PTO], they may be considered and, if proper, entry may be recommended by the primary examiner.

Id. (Emphasis in original).

Sycor's amendments were not "typographical" revisions; at the very least they were editorial revisions. It would have been important to a reasonable PTO examiner for Sycor to reveal the true character of the changes in order to determine whether they were "needed for proper disclosure" and would "require no substantial amount of additional work on the part of the [PTO]." Sycor avoided making such a showing by falsely characterizing the changes as merely "typographical."

PTO Manual § 714.16 further requires that "[a]s to amendments affecting the disclosure ... the remarks accompanying the amendment must fully and clearly state the reasons on which

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decision, a showing of more than gross negligence may be required. *Id.* Recent jurisprudence makes clear that in inequitable conduct analysis the PTO standard is the "major standard for materiality." *Akzo, N.V. v. U. S. International Trade Commission*, 808 F.2d 1471, 1481 (Fed. Cir. 1986); *see also Pacific Furniture Mfg. Co. v. Preview Furniture Corp.* 800 F.2d 1111, 1114 (Fed. Cir. 1986); *A. B. Dick Co. v. Burroughs Corp.*, 798 F.2d 1392, 1397 (Fed. Cir. 1986); *In re Jerabek*, 789 F.2d 886, 890 (Fed. Cir. 1986).

reliance is placed to show: (1) why the amendment is needed; (2) why the proposed amendment or new claims require no additional search or examination; (3) why the claims are patentable, and (4) why they were not earlier presented."

Sycor's amendments certainly affected the disclosure. What the specification had disclosed as only a "wired program," the amendments changed to a "wired or otherwise fixed program." Sycor did not make the required showing regarding why the amendments were needed, why the amendments would require no additional "search or examination," or why the amendments "were not earlier presented." Sycor escaped such a showing by falsely characterizing the amendments as "typographical" error corrections and corrections intended merely to add to the clarity and readability of the specification. The *PTO Manual* makes clear that "a reasonable patent office examiner" would consider Sycor's false characterization of these amendments "important in deciding whether to allow the application to issue as a patent." If Sycor had correctly characterized the amendments as major changes in the specification (or even editorial changes), a reasonable PTO examiner would have required Sycor to make the heightened showing required by the *PTO Manual* before allowing the '375 patent to issue with the amendments. If Sycor had truthfully characterized the changes, a reasonable PTO examiner likely would have held the amendments to be inappropriate in the Rule 312 context and refused to grant the request. This would have subjected Sycor to the requirement that it justify why no new examination was needed, why the changes did not affect patentability, and why they were not earlier presented.[9]

The court holds that Datapoint has made the threshold showing that Sycor's misrepresentations concerning the Rule 312 amendments were material because there is "a substantial likelihood that a reasonable patent office examiner would have considered" Sycor's misrepresentation "important in deciding whether to allow the application to issue as a patent." *See J. P. Stevens*, 747 F.2d at 1559.

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9 The materiality of the changes is also evidenced by the fact that, in the present litigation, the type of memory claimed in the patent is central to one of the infringement questions. *See infra* § IV(B) (1).

-d-

The court next decides whether Datapoint has proven by clear and convincing evidence that Sycor *intentionally* misrepresented the nature of these amendments to the PTO. The court finds that the misrepresentations were intentional.

Datapoint offered five experts who testified that these amendments were major changes of the disclosure. Gordon Bell ("Bell") testified the amendments "change the nature of the kind of ... machine. It converts the machine almost from a very special purpose machine to quite a general purpose machine." (Tr. 50:11). Kay Magleby ("Magleby") testified that "[w]hen you insert the word 'or the like' then that opens it up to any form of read-only memory device and so it makes it a much broader interpretation." (Tr. 40:32). He opined that the amendments "broaden the interpretation significantly." (Tr. 40:33). Earle Pughe ("Pughe") testified that the amendments "substantially expanded the scope of the claim." (Tr. 57:144). He also stated that when he read "these changes that they [Sycor] stuck in it looks like to me that they are trying to say, to expand that a little." *Id.* Fernando Corbato ("Corbato") testified that the amendments were not clerical error corrections but instead constituted "a very substantive change." (Tr. 67:70). Thomas Osborne ("Osborne") testified that between June 13, 1969, when the application was filed, and February 9, 1973, when Sycor applied for the Rule 312 amendments, a great deal of progress had occurred in the computer field. Regarding the column 2, line 11 amendment that added "or otherwise fixed program," Osborne testified that "there was a lot of technological advance between that time [of the original application] and this [the amendment]" and that this amendment "expands [the disclosure] to incorporate other technologies that may not have been in mind at that time. It greatly broadens the aspect of what's said." (Tr. 55:25).

The court is unable to find from the trial evidence that the amendments did concern typographical errors or add clarity or readability to the specification. Although NTI does not have the burden of proof on the inequitable conduct issue, it presented no evidence explaining why Sycor wrongly characterized these amendments or indicating that the misrepresentations resulted from simple

negligence or an honest mistake.[10] On the other hand, because direct proof of the patent prosecutor's intent to mislead is normally absent, Datapoint is not required to prove Sycor's actual state of mind. Sycor's intent may be proven by showing acts, the natural consequences of which are presumably intended by the actor. *Rohm & Haas Co. v. Crystal Chemical Co.*, 722 F.2d 1556, 1571 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). The patent prosecutor's submission of obviously false representations "usually will support the conclusion that" those misrepresentations were part "of an intentional scheme to defraud the PTO. *Id.* The present trial record leads to the finding that Sycor acted with the specific intent to deceive the PTO.

NTI defends against the misrepresentation claim on two grounds. First, NTI contends the amendments were valid because they brought the specification in line with the independent claims. NTI reasons that, because claim 1 of the '375 patent states a fixed-program read-only memory, the '375 patent was clearly not limited to a hard-wired read-only memory and Sycor could appropriately amend the specification so that it was not so limited. NTI asserts that putting "or otherwise fixed" in the disclosure did not constitute new matter under 37 C.F.R. § 1.118(a) (1987) and that Sycor's doing so complied with a provision of the *PTO Manual* that requires a party to "amend the drawing and specification to show this [new] subject matter" when the specification fails to reflect the subject matter of the independent claims. *PT0 Manual* § 608.01(l) (3d ed., rev. Jan. 1968).

NTI's argument misses the mark. Whether Sycor could or should have amended the disclosure does not affect the fact that Sycor *misrepresented* why it made the amendments. Sycor did not explain to the PTO that the amendments were not new matter or why the *PTO Manual* required the amendment. NTI cannot, after the fact, excuse Sycor's disingenuous conduct by explaining why Sycor would have been warranted in requesting the Rule 312 amendments.

The case law makes clear that, although a party's underlying conduct may be acceptable, that fact does not exculpate the party

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10 NTI does contend *infra* that the amendments were appropriately offered to conform the specification with the independent claims and complied with the PTO Manual.

from an inequitable conduct finding where the party misrepresented the nature of the underlying conduct to the PTO. In *Driscoll*, 731 F.2d at 885, the Federal Circuit affirmed a finding that the patent prosecutor committed inequitable conduct by not disclosing a material prior patent. The prosecutor argued that the PTO would still have allowed the patent even had the prosecutor disclosed the prior patent. The court held that whether the prosecutor's patent "may be patentable over the withheld prior art, as argued by [the prosecutor] is not relevant. What is relevant is that the board found that a reasonable examiner would have considered such prior art important in deciding whether to allow the patent application." *Id.* at 884.[11]

In *Gardco Mfg. Inc. v. Herst Lighting Co.*, 820 F.2d 1209 (Fed. Cir. 1987), the court rejected the prosecutor's argument that its patent was valid despite the concealed material prior art. The court held that whether the "undisclosed art anticipates the claimed invention or whether it would have rendered the claimed invention obvious under 35 U.S.C. § 103" was not relevant to the district court's finding that the prosecutor committed inequitable conduct by not disclosing the prior art. *Id.* at 1214. In *Norton v. Curtiss*, 433 F.2d 779 (C.C.P.A. 1970), the court concluded that a district court must not overlook indications the prosecutor committed inequitable conduct simply because the application "*should* have been patented." *Id.* at 795. (Emphasis in original). In *A. B. Dick Co. v. Burroughs Co.*, 798 F.2d 1392, 1397 (Fed. Cir. 1986), the court rejected the prosecutor's argument that the nondisclosed prior art did not constitute inequitable conduct because the PTO, with knowledge of the art, eventually found the patent valid. The court held that "the test for materiality is *not* whether there is anticipation or obviousness but, rather, what 'a reasonable examiner would consider important in deciding whether to allow the application to issue as a patent.'" *Id.* (Emphasis in original; ellipses omitted). Finally, in *Hazel-Atlas Glass Co. v. Hartford-Empire Co.*, 322 U.S. 238 (1944), the Supreme Court rejected the patent prosecutor's argument that a fraudulently prepared article supporting the patent application was not relied upon by

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11 Thus to the extent NTI offers this argument to show the misrepresentations were immaterial, the court rejects the contention. As in *Driscoll*, what is dispositive for the inequitable conduct inquiry is whether a reasonable PTO examiner would have considered the matter important to his decision.

the circuit court in upholding the patent and that the article was true. The Court held that the prosecutor's inequitable conduct precluded the assertion of these arguments. *Id.* at 247.[12]

A patent applicant bears a special duty of candor in dealing with the PTO. In order for the patent system to work effectively, a patent applicant must be held to "(t)he highest standards of honesty and candor." *Hycor Corp.*, 740 F.2d at 1538 (quoting *Norton*, 433 F.2d at 794). The PTO must be able to rely on the applicant's integrity and deal with the applicant in a spirit of trust and confidence. *Kingsland v. Dorsey*, 338 U.S. 318, 319 (1949). Accordingly, irrespective whether Sycor would have been entitled to the amendments had it correctly represented their import does not affect the court's inequitable conduct analysis.

NTI contends second that "the fact that the Examiner accepted the proposed changes is virtually conclusive of the fact that the changes were proper." NTI cites *Technicon Instruments Corp. v. Coleman Instruments Corp.*, 385 F.2d 391 (7th Cir. 1967), in support of this proposition. The court disagrees.

Technicon was an infringement action which centered on whether an "air bubble" claim was disclosed in an earlier patent or whether its subsequent addition to the patent was new matter. The defendant contended it was new matter, although the defendant's own expert testimony showed that it was not. In holding it was not new matter the Seventh Circuit stated:

> The Patent Office did not deem it "new matter." It was satisfied. Their finding should be given "special weight."

385 F.2d at 393. This particular holding in *Technicon* has been followed only once. In *Acme Highway Products Corp. v. D. S. Brown Co.*, 431 F.2d 1074 (6th Cir. 1970), *cert. denied*, 401 U.S. 956 (1971), the Sixth Circuit held that "[t]he Patent Office's judgment on such technical issues, *i.e.*, whether a modification is an embellishment or is of patentable importance, is entitled to special weight." *Id.* at 1081.

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12 In *Standard Oil of California v. United States*, 429 U.S. 17, 18 & n.2 (1976) (per curiam), the Court departed from a principle of *Hazel-Atlas* (necessity for appellate leave before district court can reopen a case which had been reviewed on appeal). That holding is inapplicable here and thus does not affect this court's reliance upon *Hazel-Atlas*.

Neither *Technicon* nor *Acme Highway* persuades the court that the PTO's allowing the Rule 312 amendments is tantamount to a finding that no inequitable conduct occurred.

Instead, more recent case law makes clear that if a party commits inequitable conduct which the PTO fails to discover, the PTO's failure does not absolve the inequitable conduct. In *Kangaroos U.S.A., Inc. v. Caldor, Inc.*, 778 F.2d 1571, 1576 (Fed. Cir. 1985), the patent prosecutor made a clearly improper claim that a second patent application was entitled to the benefit of the filing date of a first patent application. The district court held that this improper claim constituted inequitable conduct. On appeal, the patent prosecutor contended that because the PTO failed to check the improper claim the patent prosecutor did not commit inequitable conduct. The court held that if the patent prosecutor's actions constituted inequitable conduct, "lapse on the part of the examiner does not excuse the applicant." *Id.*

In *Rohm & Haas*, the district court found the patent prosecutor did not commit inequitable conduct, despite the prosecutor's falsification of affidavits during the application process, because subsequent affidavits the prosecutor presented the examiner informed the examiner of facts from which the examiner could have discovered the falsity of the prior affidavits. The Federal Circuit reversed, holding that this cure was inadequate as a matter of law. 722 F.2d at 1573. The prosecutor could not take solace in the examiner's acceptance of a second group of affidavits and subsequent patent allowance. Such acceptance did not absolve the prosecutor's inequitable conduct. *See id.* at 1572-73.

Likewise, the PTO's acceptance of the Rule 312 amendments does not absolve Sycor of the intentional misrepresentations that it made in applying for the amendments. The law is clear that when a patent applicant commits inequitable conduct, a "lapse on the part of the examiner does not excuse the applicant." *Kangaroos*, 778 F.2d at 1576.

-e-

Having determined that the misrepresentations were material and that Sycor acted intentionally, the court next balances the materiality of the misrepresentations with Sycor's intent to determine "whether the scales tilt to a conclusion that 'inequitable conduct' occurred."

See In re Jerabek, 789 F.2d at 890. Balancing materiality and intent, both of which the court finds to exist in high measure, the court concludes Sycor committed inequitable conduct by its intentional misrepresentation of the nature of the five amendments. The '375 patent is therefore unenforceable. *See J. P. Stevens*, 747 F.2d at 1561 (once court concludes that inequitable conduct occurred, all the claims are unenforceable).

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Datapoint contends Sycor committed inequitable conduct in submitting certain January 25, 1971 amendments in response to the examiner's rejection of the '375 application. The court disagrees.

On September 22, 1970, the PTO rejected the '375 patent application for several reasons pursuant to 35 U.S.C. § 112. First, the PTO concluded that Sycor had failed to give sufficient structural detail to enable one skilled in the art to make and use the invention. Second, the PTO found that the application did not set forth the best mode contemplated by the '375 invention. Third, the PTO rejected the application based upon inadequate disclosure.

On January 25, 1971, Sycor submitted an amendment to the specification, which stated:

> It may be observed in studying the foregoing specification that the same has not been burdened bythe inclusion of large amounts of detailed and specific information relative to such matters as circuitry, memory structure, logic and timing, instruction sets, and the like, *since all such information is basically well within the skill of the art as of the present date*. Examples of technical publications already in existence and relating to such aspects are set forth hereinafter, with the basic technical information set forth in each incorporated by reference. U.S. Pat. No. 3,389,404 issued to Robert A. Koster, U.S. Pat. No. 3,406,371, issued to Amdahl et al.; Technical Memorandum ESL-TM-167 dated March 1963, by Robert H. Stotz; Technical Note by Robert H. Kostner in the Sixth National Symposium Information Display, Sept. 29, 1965; Technical Memorandum by Thomas H. Tach, proceedings of the Thirty-Second National Symposium on Information Display, February 1964.

(PX 1, col. 11, l. 48-66). (Emphasis added). Along with this amendment Sycor submitted a nine-page statement concerning the reasons for the amendment and Sycor's position concerning why the '375 patent should be allowed. Sycor stated:

> As suggested by the Examiner, applicant has amended the specification to incorporate by reference a number of technical publications in existence prior to the filing date of this application, in order to meet the rejection under Section 112 and have the same withdrawn. In this connection, the Examiner has stated that in his view the specification should include,. or incorporate by reference, additional structural details or information particularly concerning the read-only memory, the dedicated latches, and the control logic, including such matters as details relative to the logic and timing, time-sharing details, control details, and the like. In order to make every effort to comply with the requirements set forth by the Examiner, regardless of whether applicant agrees or disagrees with the same, applicant has included in the specification a reference to a number of technical publications which are replete with the type of information regarded by the Examiner as being so necessary in this application, *all of which must certainly be regarded as known to one skilled in the art.*

(PX 2 at 46-47). (Emphasis added). Sycor disagreed with the PTO examiner's prior rejection, concluding that one skilled in the art could build the '375 invention based on the original specification:

> Applicant disagrees totally with the Examiner as to the necessity of including the elaborately detailed information demanded in the preceding Office Action. The invention toward which this application is directed is conceptual in nature, involving the use of generally known types of elements or equipment, whose use is well within the skill of the art, in the particular architectural or systems concepts on which this data entry terminal is based

(PX 2 at 48).

Datapoint contends Sycor committed inequitable conduct by submitting amendments that were not responsive to the PTO examiner's rejection. Datapoint posits that the amendments neither

provided sufficient structural detail to permit one skilled in the art to use the invention nor set forth the best mode Sycor contemplated. Datapoint further contends the amendments contained information not disclosed in the '375 patent's claims or specification and that NTI misrepresented the information in the amendments. In response, NTI argues that the amendments were not intended to provide sufficient structural detail to build the device but were instead submitted as evidence that the disclosure of structural detail was not necessary because such detail was well known in the art.

The court agrees with NTI that the evidence indicates that the January 25, 1971 amendment was appropriately characterized to the PTO examiner as an explanation of the level of skill in the art. Sycor did not represent to the PTO that these January 25, 1971 amendments were intended fully to disclose the device; instead, Sycor clearly represented that the amendments were to show the level of skill in the art. The court holds that Datapoint has not proven inequitable conduct by clear and convincing evidence.

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Datapoint contends Sycor committed inequitable conduct in submitting a certain August 31, 1972 amendment to the PTO. The court disagrees.

On May 1, 1972, the PTO rejected the '375 patent application for the fifth time, determining the specification to be inadequate because it lacked sufficient structural detail to enable one skilled in the art to make and use the invention and because the specification did not contain sufficient detail to show the best mode contemplated. On August 31, 1972, Sycor amended the specification to state:

> Inasmuch as the foregoing specification is directed toward those skilled in, and fully conversant with, the art pertaining to the subject matter of this invention, the specification has not been unduly burdened with the inclusion of unnecessarily detailed descriptions of things already well known to those skilled in the art as of the filing date. To whatever extent it may be deemed desirable, however, those desiring to do so may refer further to previous patents and publications which show techniques or apparatus for the practice or implementation of different parts of the novel combination described and claimed

herein, as follows.

(PX 1 at col. 12, l. 1-12). The amendment then referred to 19 different patents and technical publications with a short description of how each might be helpful in explaining the prior art and building the '375 device. In the short remarks accompanying the amendment, Sycor stated that the amendment was made in the manner suggested by the examiner although it was Sycor's "complete conviction that such an amendment should not be necessary under the applicable statutory and case law." Sycor asserted that it made the amendment "merely as the most convenient expedient for obtaining allowance of this case." Sycor also averred that the "Amendment clearly does not constitute new matter since the various concepts, principles and hardware discussed in the prior art patents and publications are discussed specifically in this application as filed and *were common knowledge to those of ordinary skill in the art at the time of filing this application*." (PX 2 at 126). (Emphasis added).

Datapoint contends Sycor committed inequitable conduct because the amendment was not responsive to the PTO's rejection in that it did not provide sufficient structural detail to enable one skilled in the art to make and use the invention or to show the best mode contemplated. Datapoint also contends that the additional technical publications, textbooks, and patents referred to in the amendment contained new matter not disclosed in original claims and specification and were thus misrepresented.

The court rejects Datapoint's contentions. The face of the amendment, as well as the context in which it was made, make clear that the amendment was not represented as an attempt fully to disclose the structural detail or the best mode contemplated to build the '375 device. Neither was the amendment an addition to the patent's substantive matter and so could not constitute new matter. The evidence indicates that the August 31, 1972 amendment was appropriately characterized to the PTO examiner as an explanation of the level of skill in the relevant art. Datapoint has not proven inequitable conduct by clear and convincing evidence.

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Datapoint contends Sycor committed inequitable conduct by not disclosing to the PTO examiner the existence of U.S. Patent No.

3,308,438 ("the Spergal patent"). Datapoint admits that the Spergal patent is mentioned in the '375 patent, which states:

> U.S. Patent 3,308,438 shows data display by use of a CRT which may be used in practicing the present invention and this patent also shows the use of a core memory, as well as shift registers, laches, a keyboard, and buffer memories, all of which are used in the present invention.

(PX 1, col. 12, l. 29-34). Datapoint contends that this statement is misleading because the Spergal patent actually discloses much more than the general information stated in the '375 patent. Datapoint also contends that the Spergal patent anticipates claim 29 and that Sycor hid the importance of the Spergal patent by concealing it under a number of other patents in the '375 specification.

The court holds *infra* at § 11(E) (15) that the Spergal patent does not anticipate claim 29. The court finds here that Datapoint has failed to show by clear and convincing evidence that Sycor committed inequitable conduct in reference to the Spergal patent. Datapoint has failed to make even a threshold showing that the Spergal patent was either material to the '375 patent or that Sycor exhibited a mentally-culpable state of mind in making the single disclosure concerning the Spergal patent.

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Datapoint contends that Sycor's failure to disclose the SDS Magpak, a magnetic tape cartridge system, constituted inequitable conduct rendering the '375 patent unenforceable. The court disagrees.

In the 1960's, while a director of SDS, Irwin became familiar with the use of the SDS Magpak magnetic tape system as an input/output device connected to the SDS 910, 920, and 930 data entry systems. The Magpak system used two magnetic tape cartridges. (DX 2330). SDS began selling the Magpak after Irwin left SDS. Irwin admitted knowing about the Magpak and he was able, at trial, to recall some of the Magpak's functional details. (Tr. 41:68).

Datapoint contends the Magpak was an example of the early use of cassette-type peripherals in conjunction with computers and thus was material to consideration of the '375 patent. Datapoint reasons that Sycor committed inequitable conduct when it failed to disclose the device.

NTI responds that there is no evidence in the record to indicate that the SDS computers and Magpak were ever used as data entry systems and that Datapoint presented no evidence that the computers had appropriate software to so function. NTI further contends that the SDS magnetic tape cartridges were not Philips cassettes and so did not have the Philips cassette's high degree of "user friendliness." Because the Magpak did not use a Philips cassette, NTI contends, the Magpak was not material to the '375 patent application. NTI also posits that Sycor's advising the PTO of the Magpak's existence would have provided only cumulative information of another non-cassette magnetic mass storage medium for digital data. NTI further contends that there is no evidence in the record that either the '375 inventors or their patent attorney had a culpable state of mind in not revealing the existence of the Magpak.

The court holds that Datapoint has not satisfied by clear and convincing evidence the materiality and intent requirements for inequitable conduct with respect to the Magpak. Regarding materiality, Datapoint failed to show that there is a substantial likelihood that a reasonable PTO examiner would have considered the Magpak important in deciding whether to allow the '375 application to issue as a patent. *See J. P. Stevens*, 747 F.2d at 1559. Datapoint has not refuted, by clear and convincing evidence, NTI's contentions that the Magpak was not used as a data entry system or that the Philips cassettes were more "user friendly" than Magpak cartridges.

Similarly, Datapoint has not adequately rebutted NTI's contention that disclosing the Magpak would simply have provided cumulative information as to another non-Philips cassette magnetic mass storage medium. The '375 patent discloses two other patents, U.S. Pat. No. 2,918,658 and U.S. Pat. No. 3,447,134, and one article, "Magnetic Data Recording Theory: Head Design" by A. S. Hoagland (Trans. AM. INST. ELEC. ENGRS. Vol. 75 part 1, November 1965), which generally focus upon magnetic tape data recordings. A prior art reference that is merely cumulative is not material. *J. P. Stevens*, 747 F.2d at 1559-60; *Kimberly-Clark*, 745 F.2d at 1455-1456. Datapoint has not satisfied the court that the Magpak was not merely cumulative of the disclosed patents and article.

Given the low level of materiality, Datapoint must have proved that Sycor had a high level of mental culpability in not disclosing the

SDS Magpak. This Datapoint did not do.

Datapoint could have demonstrated Sycor's mental culpability in two ways: first, by introducing direct evidence of Sycor's mental culpability; and, second, by proving that Sycor's nondisclosure benefited Sycor.[13] The record is devoid of direct evidence, and Datapoint has not shown that Sycor's nondisclosure of the Magpak naturally benefited Sycor. Datapoint has not proven inequitable conduct by clear and convincing evidence.

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On January 21, 1972, in response to a PTO rejection for § 112 inadequate disclosure, Sycor filed affidavits prepared by Guillermo Diaz, Raymond P. Kavlick ("Kavlick"), and Norman R. Scott. In these affidavits the affiants represented that, if an engineer normally skilled in the art examined the '375 application, he would be able to build the '375 device. Kavlick further represented that a machine embodying the '375 application had in fact been built.

Datapoint contends that Sycor committed inequitable conduct in filing the three affidavits because it was not able to reduce the invention to practice as of June 13, 1969. Datapoint argues that, when Sycor filed the '375 application, Sycor had not implemented an off-the-shelf audio tape cassette recorder. Datapoint also asserts that Sycor had not implemented a device incorporating a central logic unit containing peripheral control logic as claimed in the '375 patent application. Datapoint argues further that Sycor never reduced to practice such a central logic unit and that any reduction to practice of the recorder/reproducer required more than ordinary skill because it required knowledge of the four Sycor cassette patent applications.

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13 *See Kansas Jack, Inc. v. Kuhn*, 719 F.2d 1144, 1151 (Fed. Cir. 1983):

> The intent element of fraud, however, may be proven by a showing of acts the natural consequences of which are presumably intended by the actor. Statements made with gross negligence as to their truth may establish such intent. The duty of candor owed the PTO being uncompromising, it would deal a deathblow to that duty if direct proof of wrongful intent were required. At the same time, that something thought to be true when stated, or a piece of prior art thought unimportant to the PTO's decisions, was later determined to have been true or important will not automatically and alone establish that fraud or inequitable conduct occurred. The fact finder must evaluate all the facts and circumstances in each case.

-a-

The court rejects Datapoint's contention that Sycor had not implemented an off-the-shelf audio tape cassette recorder[14] when it filed the patent application. By March 1969, Sycor had shipped to Olivetti machines fitting the '375 application's specification which contained CRR-1B cassette recorder/reproducers as disclosed in the '375 application. The affidavits, therefore, were not false.

In the 35 U.S.C. § 102(b) context, the Federal Circuit has held that reduction to practice requires only that an invention be "sufficiently tested to demonstrate it will work for its intended purpose" and does not require it to "be in a commercially satisfactory stage of development." *Barmag Barmer Maschinenfabrik AG v. Murata Machinery, Ltd.*, 731 F.2d 831, 838 (Fed. Cir. 1984). Datapoint has not proven that Sycor failed to meet this standard.

-b-

Datapoint also contends NTI never implemented or reduced to practice a device incorporating a central logic unit embodying peripheral control logic and thus any reduction to practice of the recorder/reproducer required more than ordinary skill because it required knowledge of the four Sycor cassette tape patent applications.[15]

In support of its position that Sycor never implemented or reduced

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14 Datapoint's argument appears to focus upon the cassette recorder/reproducer as a unit rather than upon the digital data recording tape used in the unit. The court has held *supra* at § II(A)(1) that Datapoint has not proven by clear and convincing evidence that Sycor committed inequitable conduct by failing to disclose the four Sycor cassette patents. The court holds *infra* at § II(C)(1) that Datapoint did not prove that Sycor failed to disclose the best mode by failing to disclose the cassette patents. The court does hold *infra* at § II(C)(3), however, that Sycor failed to disclose the best mode contemplated for the digital data recording tape itself (as opposed to Philips cartridges). This last holding is not inconsistent with rejecting Datapoint's contention here, however, because the court does not understand the present assertion to focus upon the data recording tape itself.

15 Because the court rejects *infra* at § II(C)(1) the best mode argument regarding the four cassette patents, the court rejects without discussion the contention as presented in the form of an inadequate disclosure argument.

to practice a '375 machine with "substantially all of the control logic" in the central logic unit, Datapoint relies upon the testimony of Robert Sigal ("Sigal"), Edward Zimmer ("Zimmer"), and Kavlick. These witnesses testified that the original concept was to put all the control logic, including the logic which allowed the peripherals to function as peripherals, in the central logic unit. They further testified that the Sycor engineers realized they could not make a central logic unit powerful enough to contain all this control logic. Instead, the Sycor engineers decided to take the control logic which allowed the peripherals to function as peripherals out of the central logic unit and put it back into the peripherals. (Zimmer, Tr. 37:35-36; Sigal, Tr. 38:176-186). Datapoint contends that, because Sycor took the control logic which allowed the peripherals to function as peripherals out of the central logic unit and put it into the peripherals, Sycor never built a '375 machine containing a central logic unit embodying substantially all the control logic.

NTI responds that the Sycor device did have a central logic unit which embodied "substantially all of the control logic" if one correctly defines the term "control logic" as used in the patent. According to NTI, "control logic" is the logic that instructs the peripherals what instructions to execute rather than how to execute them. NTI contends the Sycor machine's central logic unit had the logic to instruct the peripherals what to do, although each peripheral had its own logic to know how to carry out the command.

In construing the meaning of "control logic" as used in the '375 patent, the court considers the language of the claims, the patent specification, other claims of the patent, the prosecution history, and expert testimony. *Rite-Hite Corp. v. Kelley Co., Inc.*, 819 F.2d 1120, 1123 (Fed. Cir. 1987). The court concludes from this evidence that "control logic" is not the logic that actually operates the peripherals, but is instead the logic that instructs the peripherals to function at a given point in time in accordance with the particular peripheral's pre-established capability.

Claim 1 of the '375 patent shows that it incorporates the "what to do definition of "control logic." Before claim 1 describes a "central logic unit embodying substantially all of the control logic for said entry means and display means," the claim describes "a keyboard data entry means for producing coded alphanumeric data representa-

tive of different keys upon actuation thereof." Thus the claim itself indicates that the keyboard will have sufficient internal logic to function as a keyboard. Claim 1 further describes "an optical display means for visual character read-out of such data." Claim 1 therefore indicates that the optical display will have sufficient internal logic to function as an optical display.

Furthermore, the patent specification indicates that the keyboard and optical display peripherals should have sufficient internal logic to function as keyboard or optical display peripherals. (*See* PX 1, col. 4, l. 46-52; col. 5, l. 19-27; col. 7, l. 18-46; col. 9, l. 49 to col. 10, l. 22).

In addition, the trial evidence makes clear that, several months before Sycor applied for the patent, it abandoned its attempts to put the "how to" logic in the central logic unit. Instead, Sycor decided to place this logic in the peripherals. Datapoint has not convinced the court that, at the time Sycor applied for the patent, it intended a definition of "control logic" that varied from what it was practicing.

Because the three affidavits do not misrepresent the control logic residing in the central logic unit, the court holds that Sycor did not commit inequitable conduct by filing the January 21, 1972 affidavits.

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Datapoint argues that Sycor improperly injected "new matter" in the '375 patent application in two amendments submitted in response to PTO office actions dated September 22, 1970 and May 1, 1972. The court disagrees.

In response to the PTO's September 22, 1970 rejection for inadequate disclosure and failure to set forth the best mode, Sycor submitted the following specification amendment:

> It may be observed in studying the foregoing specifications that the same has not been burdened by the inclusion of large amounts of detailed and specific information relative to such matters as circuitry, memory structure, logic and timing, instruction sets, and the like, since all such information is basically well within the skill of the art as of the present date. Examples of technical publications already in existence and relating to such aspects are set forth hereinafter with the basic technical information set forth in each incorporated by reference. U.S.

> Pat. No. 3,389,404 issued to Robert A. Koster; U.S. Pat. No. 3,406,371, issued to Amdahl et al.; Technical Memorandum ESL-TM-167 dated March 1963, by Robert H. Stotz; Technical Note by Robert H. Kostner in the Sixth National Symposium Information Display, Sept. 29, 1965; Technical Memorandum by Thomas H. Tach, Proceedings of the Thirty-Second National Symposium on Information Display, February 1964.

(PX 1, col. 11, l. 48-66). As evidenced by the PTO's second rejection on February 26, 1971, this amendment did not satisfy the examiner's objections.

On May 1, 1972, the PTO rejected the '375 application a fifth time because the specification lacked sufficient structural detail to allow one skilled in the art to make and use the invention and because the specification did not contain sufficient detail to show the best mode contemplated. In response to this rejection, Sycor amended the specification to state:

> Inasmuch as the foregoing specification is directed toward those skilled in, and fully conversant with, the art pertaining to the subject matter of this invention, the specification has not been unduly burdened with the inclusion of unnecessarily detailed descriptions of things already well known to those skilled in the art as of the filing date. To whatever extent it is deemed desirable, however, those desiring to do so may refer further to previous patents and publications which show techniques or apparatus for the practice or implementation of different parts of the novel combination described and claimed herein, as follows.

(PX 1, col. 12, l. 1). The amendment then referred to 19 different patents and technical publications with a short description of how each might be helpful in explaining the prior art and building the '375 machine.

Datapoint contends these two amendments injected "new matter" into the '375 patent application and the court may either (1) strike the new matter amendments from the '375 patent and reject the '375 patent for inadequate disclosure, or (2) allow the new matter amendments to remain and hold that NTI is estopped to assert a filing date for the '375 patent earlier than the dates that Sycor submitted these

new matter amendments. Because the court holds that the amendments do not constitute new matter, the court declines to take either option.

Patent law specifically forbids the introduction of new matter by amendment into the invention disclosure. 35 U.S.C. § 132. The applicable PTO regulations state:

> No amendment shall introduce new matter into the disclosure of an application after the filing date of the application (§ 1.53(b)). All amendments to the specification, including the claims, and the drawings filed after the filing date of the application must conform to at least one of them as it was at the time of the filing of the application. *Matter not found in either, involving a departure from or an addition to the application after its filing date* even though supported by an oath or declaration in accordance with § 1.63 or § 1.67 filed after the filing date of the application.

37 C.F.R. § 1.118(a) (1987). (Emphasis added). Thus the PTO defines "new matter" as any matter which departs from or is an addition to the original disclosure. *See Stearn v. Superior Distributing Co.*, 674 F.2d 539, 544 (6th Cir. 1982).

Datapoint has not shown by clear and convincing evidence that these amendments were departures from or additions to the original disclosure. The amendments simply outlined the state of the prior art at the filing date. While it is true that the cited patents were different in many respects from the '375 invention, Sycor did not rely upon these differences to expand or change the invention. The amendments did only what they were represented to do, explain the state of the prior art.

B.

Datapoint next seeks to invalidate the '375 patent on the ground that Sycor did not, as required by 35 U.S.C. § 112, "particularly point out and distinctly claim the subject matter which the applicant regards as his invention."

The applicant's duty to distinctly claim the invention is separate from the applicant's duty to set forth the invention in such full, clear, concise and exact terms to enable one skilled in the art to build the invention. *Rengo Co. Ltd. v. Molins Machine Co., Inc.*, 657 F.2d 535,

550 (3d Cir.), *cert. denied*, 454 U.S. 1055 (1981). The distinctive claiming requirement is not to enable others to build the device but is instead to inform the public of the extent of the monopoly obtained by the patent owner. *United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 28, 232 (1942). Datapoint's briefing does not persuade the court to find by clear and convincing evidence that Sycor failed to satisfy § 112. Datapoint advances only enablement arguments rather than distinctive claiming arguments and has not met its burden of proof.

C.

Datapoint advances various best mode arguments in support of its invalidity theories.

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Datapoint contends Sycor concealed the best mode contemplated concerning the cassette tape drive mechanism because the patent specification discloses *capstan* cassette drive technology and Sycor had, in four other patents, evidenced its preference for *spindle* cassette drive digital technology. NTI responds that when Sycor filed for the '375 patent, Sycor actually contemplated the *capstan* cassette drive as the best technology to implement the '375 invention and therefore the earlier patents are irrelevant.

Patent law requires that "[t]he specification ... shall set forth the best mode contemplated by the inventor of carrying out his invention." 35 U.S.C. § 112. "Not complying with the best mode requirement amounts to concealing the preferred mode contemplated by the applicant at the time of filing." *DeGeorge v. Bernier*, 768 F.2d 1318, 1324 (Fed. Cir. 1985). The purpose of the best mode requirement is to prevent an inventor from receiving patent protection while at the same time concealing from the public what the inventor in fact considers to be the preferred embodiment of his invention. "Compliance with the best mode requirement exists when an inventor discloses his preferred embodiment." *Id.* at 1324-1325.

In interpreting the best mode requirement the courts have emphasized the inventor's duty to disclose the best mode he contemplates when he applies for a patent. The courts have not required that the inventor disclose the optimum mode; the existence of a better mode than the mode disclosed does not invalidate the patent if the inventor did not know or appreciate it as the best mode. "Instead the thrust of

the decisions in this area has been to require that the inventor act in good faith with no attempt to conceal what he feels is the best method of using the invention." *Studiengesellschaft Kohle mbH v. Eastman Kodak Co.*, 616 F.2d 1315, 1340 (5th Cir.), *cert. denied*, 449 U.S. 1014 (1980). Datapoint has failed to produce clear and convincing evidence that Sycor actually considered these four prior patents as the best mode of implementing the cassette tape drive aspect of the '375 invention. That Sycor represented in the four prior patent applications that the patents were excellent technologies for digital information recording does not, without more, meet Datapoint's burden.

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Datapoint next contends Sycor failed to disclose the best mode Sycor contemplated for programming the '375 device because the '375 specification was fatally vague in describing the programs to be used in the device. Datapoint's argument is properly considered *infra* at § II(D) where, under inadequate disclosure, the court holds that Sycor failed to enable one reasonably skilled in the art of computer programming to program the computer. Datapoint has failed to produce clear and convincing evidence that Sycor contemplated a better mode of programming the '375 machine than that disclosed in the '375 specification.

-3-

Datapoint contends that Sycor failed to disclose the best mode for recording digital information when it applied for the patent. In the '375 patent specification Sycor stated:

> The tape cassettes 18 are illustrated in more detail in FIG. 4, from which it will be apparent that these components are of the type which are *almost universally available for audio purposes*, comprising a flat, compact, basically rectangular case or housing (conventionally of plastic) enclosing several hundred feet of magnetic recording tape which is nominally 0.15 inches wide.

(PX 1, col. 3, l. 30-37). (Emphasis added). The specification also states:

> As is known, cassette-type tape magazines are commonly available with 280 feet, 420 feet, or 560 feet of relatively narrow (about 0.15 inches) completely-enclosed magnetic recording

tape.....

(PX 1, col. 7, l. 57-61). Datapoint contends Sycor attempted to use standard Philips audio magnetic cassette tapes for digital recording and failed, that extensive experimentation was required to determine the alterations necessary to adapt the audio cassettes for digital recording, that Sycor prepared a specification for magnetic tape cassettes to be used in purchasing cassettes for use with the '375 machine, and that the Sycor specification differed substantially from the standard audio cassette specification. Datapoint contends that Sycor knew at the time of filing the '375 patent application that this cassette specification was needed to practice the best mode of the purported inventions embodied in claims 19-23 and 24-28. Datapoint finally contends that, as a matter of law, the '375 patent is invalid because Sycor concealed the best mode Sycor contemplated of practicing the claimed inventions of claims 19-23 and 24-28.

The court finds from clear and convincing evidence that Sycor did not disclose the best mode of carrying out the '375 invention when it specified the use of standard audio tape and knew the actual tape needed to record and reproduce digital data was substantially different from such tape. In this respect the court credits the testimony of Sigal and Magleby that Sycor was not using standard audio tape and knew, in advance of the patent application date, that standard tape was not the best mode for recording and reproducing data.

Accordingly, the court concludes that independent claims 19 and 24 and their dependencies are rendered invalid by virtue of Sycor's failure to disclose the best mode.

D.

Datapoint contends the patent in suit is invalid because the '375 specification inadequately discloses the invention's program, instruction set, cassette, cassette recorder/reproducer, central logic unit, display controller, interfacing logic, and timing and circuitry. Datapoint also asserts that the '375 specification contains 18 vague and ambiguous terms that are not adequately defined in the patent specification and that have no generally accepted meaning to those skilled in the art. The court finds from the clear and convincing evidence that the patent specification inadequately discloses the program of the '375 device, thus rendering the patent non-enabling

and invalid.[16]

35 U.S.C. § 112 requires that a patent shall enable one skilled in the art to make and use the patentee's invention. Section 112 provides, in pertinent part:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same.....

Id. Enablement is a legal issue. *Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 960 n.6 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 835 (1984). The question is whether the disclosure is sufficient to enable those skilled in the art to practice the claimed invention. *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1463 (Fed. Cir. 1984). A patent may be enabling, of course, even if some experimentation by the user is necessary. *W. L. Gore & Assoc., Inc. v. Garlock. Inc.*, 721 F.2d 1540, 1557 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). The degree of experimentation necessary for one skilled in the art to practice the invention may not be undue. *Id.* The determination date for deciding enablement is the date the patent application is filed. *W. L. Gore*, 721 F.2d at 1556.

Computer programming is done in computer language, which "is not a conjuration of some black art," but is instead "simply a highly structured language." *Matter of Application of Sherwood*, 613 F.2d 809, 817 n.6 (C.C.P.A. 1980), *cert. denied sub. nom. Diamond v. Sherwood*, 450 U.S. 994 (1981). That which is necessary to render a computer program specification enabling varies according to the particular facts.

> In general, writing a computer program may be a task requiring the most sublime of the inventive faculty or it may require only the droning use of clerical skill. The difference between the two extremes lies in the creation of mathematical methodology to bridge the gap between the information one starts with ("the input") and the information that is desired ("the output").

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16 The court therefore need not reach the other inadequate disclosure arguments.

Id. at 816.

In the instant case the parties have presented conflicting expert testimony regarding whether one skilled in the art would be able to write the programs needed to practice the '375 invention. The court has chosen from among the testimony presented, finding to be persuasive and credible the testimony of Wesley A. Clark ("Clark") and Magleby. Their testimony demonstrates by clear and convincing evidence that the patent specification's lack of any information concerning the invention's programs would require a person reasonably skilled in the art of computer programming to experiment unduly in attempting to write programs for the '375 device.

By way of example, the court credits Magleby's testimony that one skilled in the art of computer programming would be hindered because he could not discern where the program format would be loaded, what would be a typical program format, what characters would be used, or what would be the range or limitations of the format program. (Magleby, Tr. 44:116-132). The court credits Clark's testimony that the '375 specification does not set out either the '375 machine's job or the needed instruction set. The court likewise agrees with Magleby's testimony that the '375 specification's general lack of technical information concerning the device's programs would cause one skilled in the computer programming art and attempting to build a '375 machine to experiment unduly.

Section 112 inadequate disclosure invalidity extends only to claims that involve the matter inadequately disclosed, 35 U.S.C. § 288. In the instant case, the inadequate program disclosure invalidates four of Sycor's independent claims. Independent claims 1 and 40 both claim programs as part of the inventions. Independent Claims 19 and 29, while not specifically mentioning programs, do speak of intricate computer activities for which the need of a computer program is implicit. The court holds that Sycor's failure adequately to disclose the programs involved in the '375 patent infects these independent claims and their dependencies, rendering them invalid.